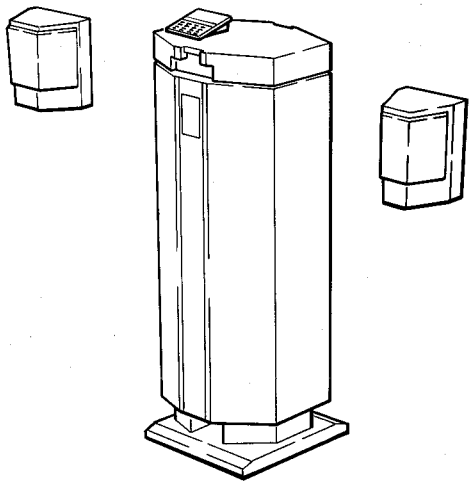
CDZ-1

SERVICE MANUAL

AEP Model



SPECIFICATIONS

CD section

System	Compact disc digital audio system
Laser	Semiconductor laser (λ=780 nm)
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code
Number of channels	2
D-A conversion	16-bit linear
Frequency response	2 Hz–20,000 Hz (±0.5 dB)
Dynamic range	More than 94 dB
Harmonic distortion	Less than 0.005%
Wow and flutter	Below measurable limit

Amplifier section

System	Quasi-complementary SEPP
Maximum power output	35 W + 35 W at 8 ohms Woofer: 60 W at 8 ohms
Harmonic distortion	Less than 0.03%
Frequency response	10 Hz–50 kHz $^{+0}_{-3}$ dB (TAPE)
Sensitivity	150 mV/50 kΩ (TAPE)
Tone control	BASS ±8 dB (100 Hz) TREBLE ±8 dB (10 kHz)

Tuner section

System	Superheterodyne tuner Quartz-locked digital synthesizer
Tuning range	FM: 87.5–108 MHz AM: 531–1,602 kHz (with the AM tuning interval set at 9 kHz)
Antenna	FM: 75 ohms AM: AM loop antenna
Usable sensitivity	FM: 11.5 dBf (IHF) AM: 250 μV/m
Signal-to-noise ratio	FM: 75 dB (stereo), 80 dB (mono) AM: 50 dB

—Continued on page 2—

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

MICROFILM

High Definition Compact Disc System

SONY®

Speaker section

	Woofer (main unit)	Tweeter (Speaker system)	Super tweeter (Speaker system)
System	Dumped bass reflex	—	—
Speaker units	20 cm (7 1/8 in.) cone type	6 cm (2 3/8 in.) cone type×2	2.5 cm (1 in.) balance drive
Nominal impedance	8 Ω		
Crossover frequency	150 Hz, 12 kHz		
Frequency range	40–20,000 Hz		
Power handling capacity	80 W (nominal) 160 W (maximum)	40 W (nominal) 80 W (maximum)	

Dimensions (speaker system) Approx. 160×180×135 mm (w/h/d) (6 3/8×7 1/8×5 3/8 inches)

Weight (speaker system) Approx. 1.7 kg×2 (3 lbs 12 oz)

General

Output HEADPHONES, TAPE REC OUT

Power requirements 220 V AC, 50/60 Hz

Power consumption 140 W

Dimensions Approx. 350×1,040×310 mm (w/h/d) (13 7/8×41×12 1/4 inches)

Weight Approx. 32 kg (70 lb 9 oz)

Remote Commander

Remote control system 3 V DC with two R6 (size AA) batteries

Dimensions Approx. 125×50×155 mm (w/h/d) (5×2×6 1/8 inches)

Weight Approx. 250 g (9 oz)

Accessories supplied
AM loop antenna (1)
Screws for speaker installation (2)
Speaker cord (2)
Felt cushion (8)
Sony battery SUM-3 (NS) (2)
Silicon cloth (1)

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BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

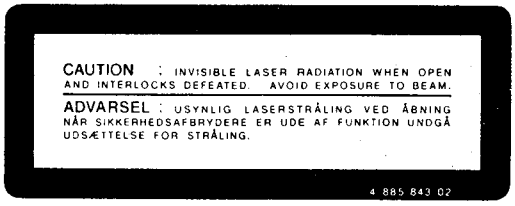
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*
     * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.
4 885 843 02

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

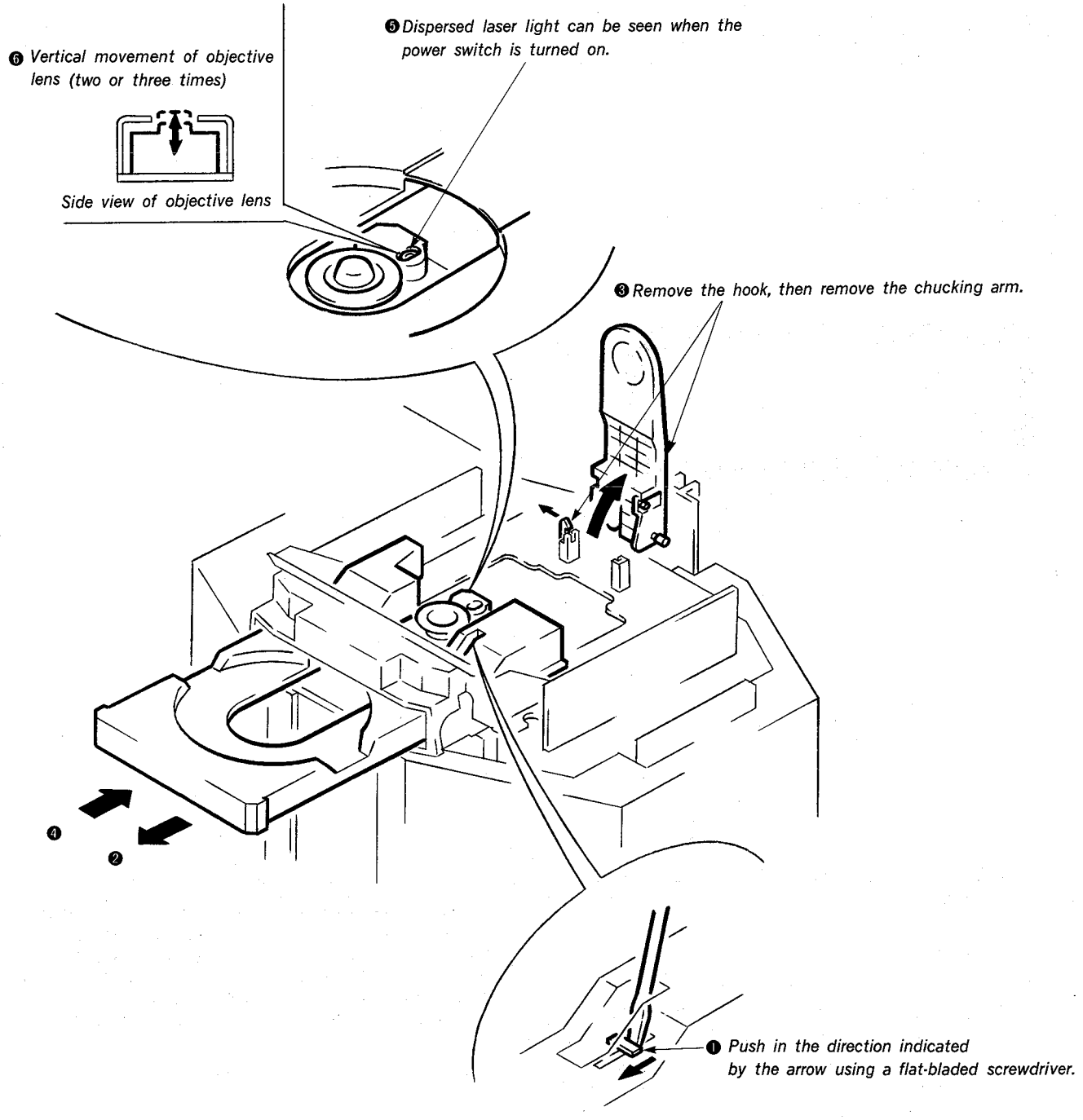
SECTION 1
SERVICING NOTES

1-1. CAUTIONS ON CONFIRMING THE LASER DIODE'S OPERATION

The laser light from this unit is focused on the reflective surface of a disk through an objective lens in the optical block. When confirming the laser diode's operation, stay at least 30cm from the objective lens.

1-2. CONFIRMING THE LASER DIODE AND FOCUS SEARCH OPERATION

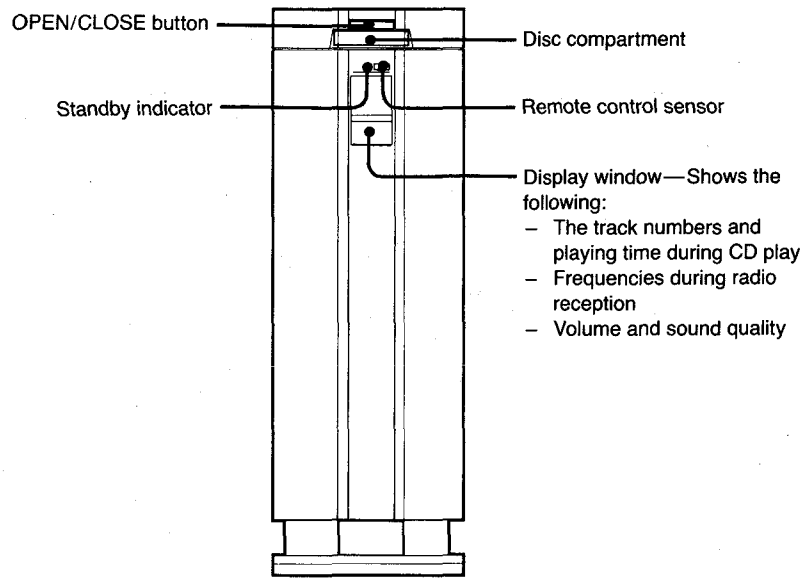
Remove the chucking arm and turn the power switch on. Check for the operation in the figure below through the objective lens. (The optical block should be in the innermost circumference.)


❻ Vertical movement of objective lens (two or three times)
Side view of objective lens
❺ Dispersed laser light can be seen when the power switch is turned on.
❸ Remove the hook, then remove the chucking arm.
❹
❷
❶ Push in the direction indicated by the arrow using a flat-bladed screwdriver.

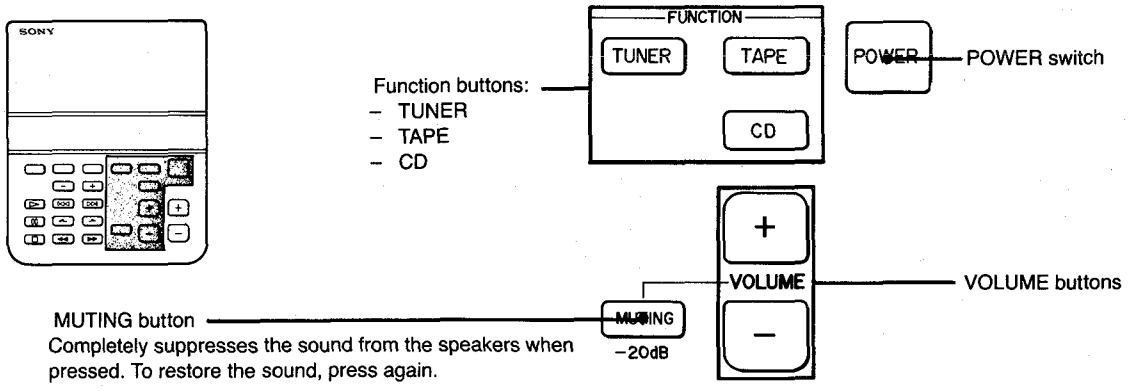
SECTION 2
GENERAL

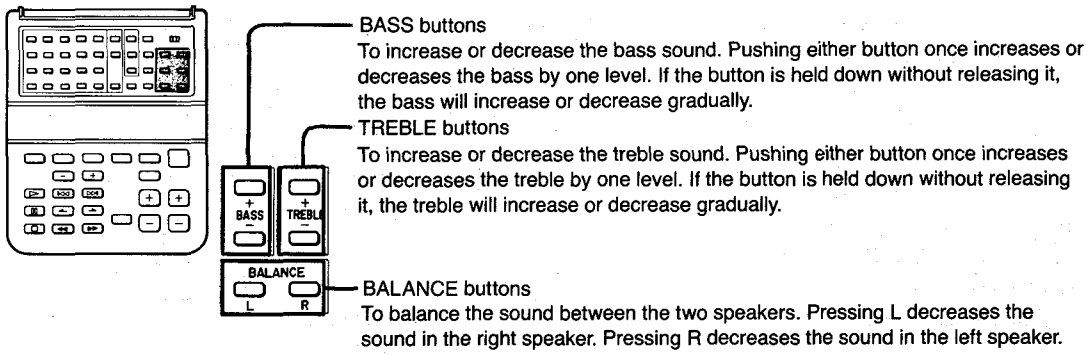
2-1. LOCATION AND FUNCTION OF CONTROLS

Main Unit


OPEN/CLOSE button
Disc compartment
Standby indicator
Remote control sensor
Display window—Shows the following:
– The track numbers and playing time during CD play
– Frequencies during radio reception
– Volume and sound quality

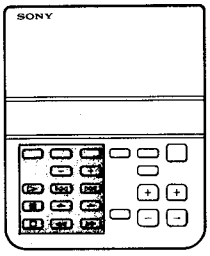
Remote Commander–General

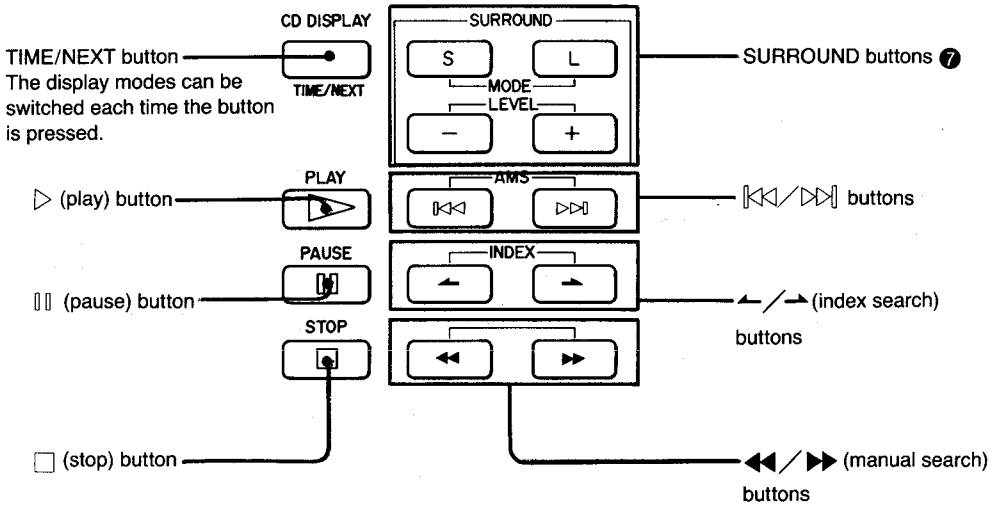



BASS
TREBLE
BALANCE
L
R
BASS buttons
To increase or decrease the bass sound. Pushing either button once increases or decreases the bass by one level. If the button is held down without releasing it, the bass will increase or decrease gradually.
TREBLE buttons
To increase or decrease the treble sound. Pushing either button once increases or decreases the treble by one level. If the button is held down without releasing it, the treble will increase or decrease gradually.
BALANCE buttons
To balance the sound between the two speakers. Pressing L decreases the sound in the right speaker. Pressing R decreases the sound in the left speaker.

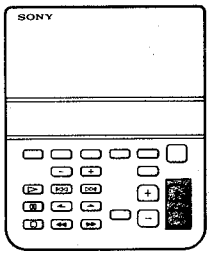
For details, on the function of each button, refer to the pages indicated in ●

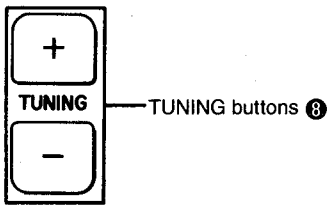
CD controls



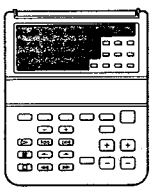


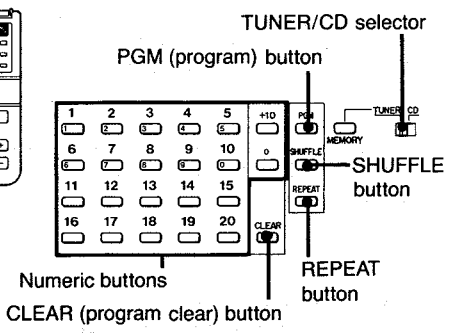
Tuner controls



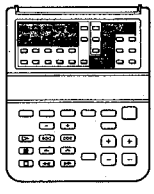


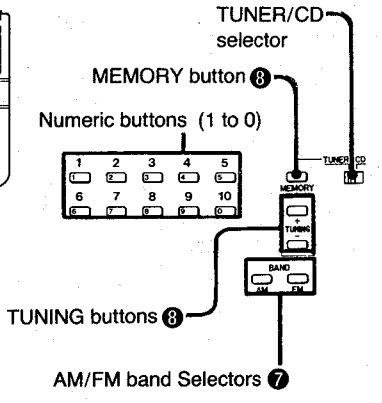
CD controls



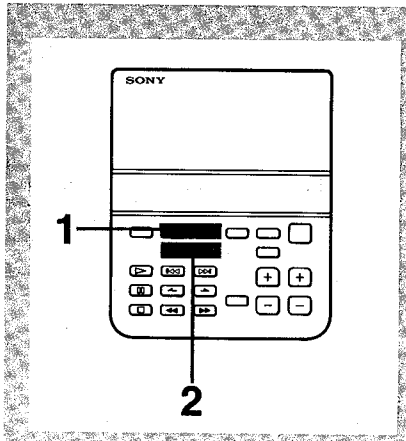


Tuner controls





2-2. USING THE SURROUND FEATURES



The Surround System can be used only while playing a CD and may be set for either a large or small room (see illustrations below). The Surround system can be adjusted to suit your particular room in the following ways:

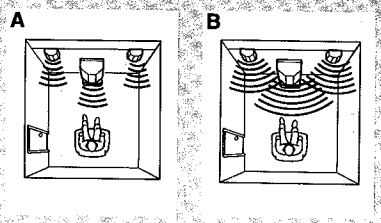
1. Press SURROUND S or L.

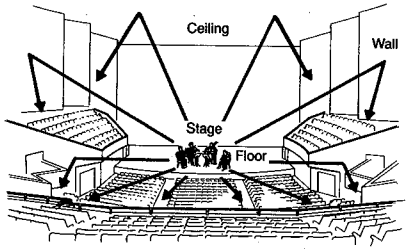
SURROUND appears.

To set the system for a small room, press S. This surround mode is most effective when listening to solo performances or background music. [A]

To set the system for a large room, press L. This Surround mode is most effective for listening to group performances such as orchestras or choirs. [B]

2. Pressing the + or – button increases or decreases the surround effect.
Pressing the button once and releasing it increases or decreases the surround effect by one level. If the button is pressed down and not released, the effect will increase or decrease gradually until the maximum or minimum level has been reached.





The High Definition Compact Disc System is designed to let you enjoy concert hall-like sound in your own home. This is accomplished by Sony's unique Surround System which takes the excellent sound produced by a CD disc and reflects it from the walls, ceiling and floor of your room, creating the sensation that you are completely immersed in sound. This is especially effective for listening to high quality musical recordings.

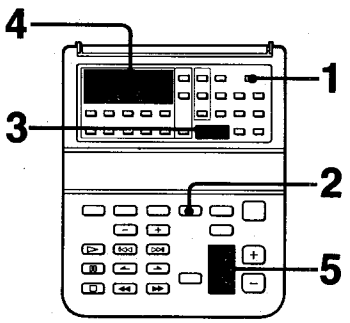
Surround Tips

- While the + or – button is being pressed, the surround indicator will flicker, but stops when the maximum or minimum level has been reached.
- Setting the Surround system at a very high level causes distortion in the sound.
- Music and other sounds which have been recorded at a low volume require a higher level of surround effect.

2-3. RADIO RECEPTION

The CDZ-1 system is also equipped with an AM/FM radio. Stations can be tuned in in the following ways:

Tuning manually



1. Set the TUNER/CD selector (inside the lid of the remote commander) to TUNER.

2. Press TUNER.

3. Select the desire band with the AM/FM band selectors.

4. Press the numeric buttons which correspond to the station you want.

Example: AM 1350 kHz [1] → [3] → [5] → [0]
FM 108.00 MHz [1] → [0] → [8] → [0] → [0]

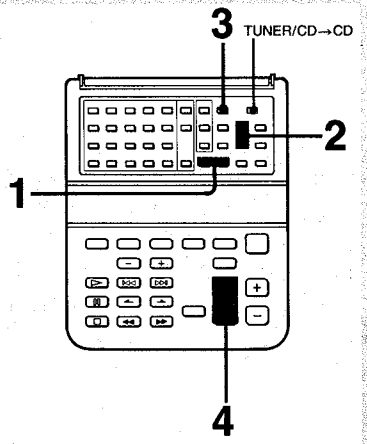
5. Adjust the volume.

If you pressed the wrong numeric button while tuning in a frequency
Begin with step 2 above again. Select FM or AM with the band selectors, then press the numeric buttons which correspond to the frequency you want.

If FM or AM is not selected
The station which has been preset on the number you press will automatically be tuned in.

When entering AM frequencies
Since the AM tuning interval is preset to 10 kHz (USA) or 9 kHz (European countries) the tuner will automatically tune in to the 10 kHz or 9 kHz interval which is closest to the number you have entered. For example, if you want to listen to station 1348 kHz, the tuner will tune in to 1350 kHz.

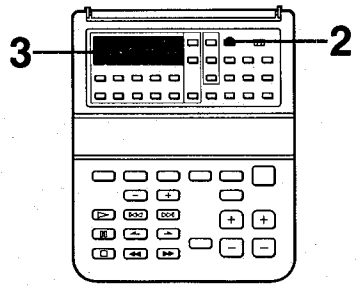
Scanning for stations (FM only)



1. Press the FM.
2. Press either + or − TUNING inside the lid of the remote commander.
   Pressing + will set the tuner to scan for higher frequencies and pressing − will set it to scan for lower frequencies.
   Once + or − has been entered, scanning will automatically start. When a station has been found, it is tuned in and will remain tuned in for 3 seconds.
3. If you would like the tuner to remain on a station press MEMORY.
4. Adjust the volume.

While scanning
If the strength of the signal is weak or there is a lot of static, the tuner will not stop at that frequency. If you would like to hear a frequency which the tuner does not tune in automatically, it is necessary to return to the manual mode (see page 7).

Retaining a station in memory

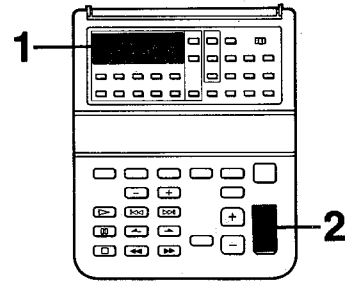


A total of 10 FM/AM stations can be memorized in any desired order.

1. Tune in the desired station (see page 7 for exact instructions).
2. Press MEMORY.
   The memory indicator will appear for 3 seconds in the display window.
3. During the 3 seconds that the memory indicator (—) is lit, press the numeric button (0 to 9) which corresponds to the position you want that station to occupy in the remembered order.
4. Repeat the above procedure for each of the stations you want memorized.

If the memory indicator goes off before you have entered the position number, press MEMORY again and enter the number when the indicator appears again.

Tuning in a memorized station

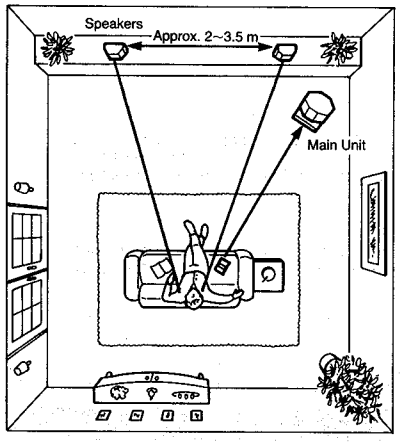


1. Simply press the desired numeric button.
2. To switch to the other memorized stations, press TUNING + for selecting the higher numeric buttons or TUNING − to select the lower numeric buttons.

Moving a preset station to another numeric button
1. Press the numeric button to be changed.
2. Press MEMORY.
3. Press the numeric button which corresponds to position you want to move the station to.

Note
Once a new station has been memorized on a position, the previously memorized station on that position will be erased.

2-4. INSTALLATION AND PLACEMENT



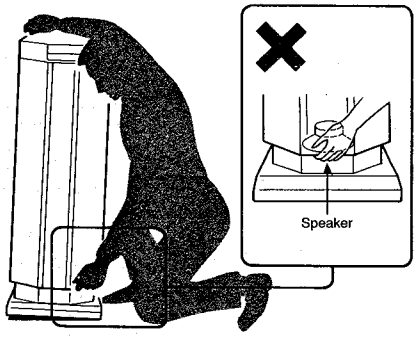
Speakers:
Should be installed about 2 to 3.5m apart at ear level.

The Main Unit:
There is no set rule for where the unit should be installed, but it should not be placed too far from the speakers.

Sound Adjustment:
The acoustics of each room are different so that the sound quality will also vary from room to room. Once your speakers and the main unit have been installed, experiment with the sound and adjust the tone quality to suit the acoustics of your room.

Installing the Main Unit

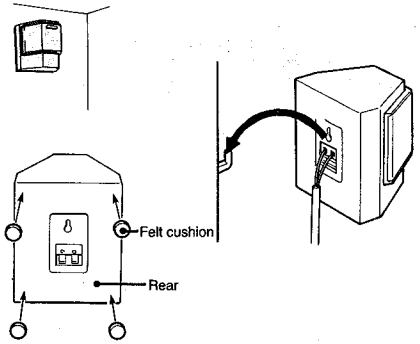
Care must be used when lifting the unit to move it to the position you desire. To avoid damaging the speaker, do not touch it while you are lifting the unit.



Installing the Speakers

The speakers may be attached directly to the wall, hung from the ceiling or placed upon a flat surface, such as a table or bookcase.

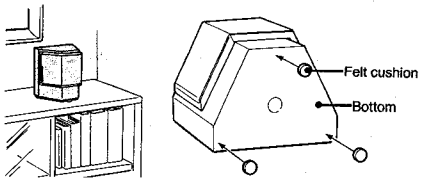
To mount the speakers on the wall:



1. Attach a hook or nail to the wall.
2. Attach the felt cushions which are supplied to the back of the speakers to avoid scratching the wall.
3. Hang the speaker on the wall by inserting the hook into the hole in the back of the speaker. (see illustration)

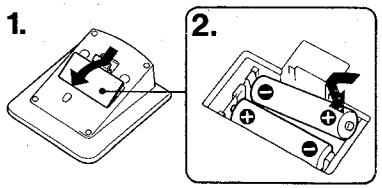
To mount the speakers on a shelf:

Attach the felt cushions which are provided to protect the surface on which you will place the speakers.



Battery Installation

The remote control unit requires two R6 (size AA) type batteries. Install them as follows:



Notes on installation

- Do not install the unit in a location near heat sources, such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Good air circulation is essential to prevent internal heat build-up in the unit. Place the unit in a location with adequate air circulation. Do not place the unit on a soft surface, such as a rug that would block the ventilation holes on the bottom.
- If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the unit. Should this occur, the player will not operate. In this case, remove the disc and leave the unit turned on for about an hour to evaporate the moisture.
- Do not throw away the carton or packing material! It will be an ideal container for transporting the system.

To avoid battery leakage
When the commander is not to be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

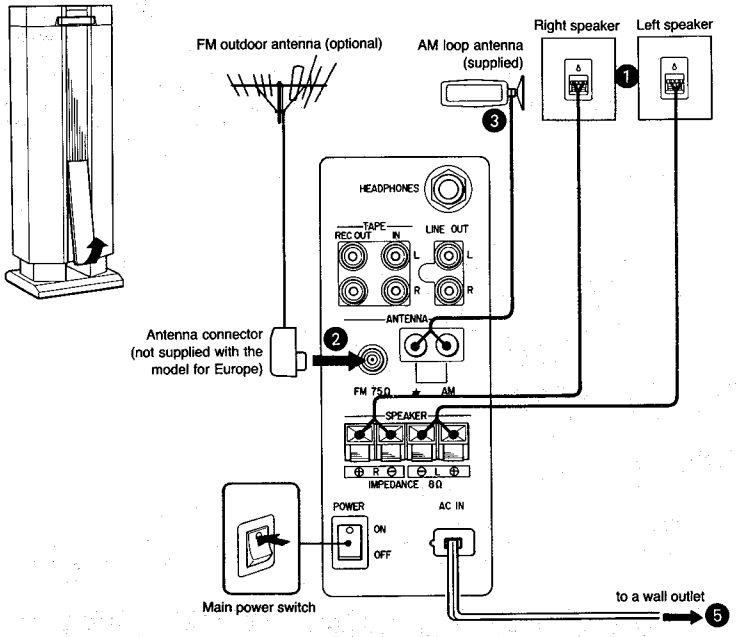
Battery Life
About half a year of normal operation can be expected when using Sony SUM-3(NS) batteries.
When the batteries are exhausted, the remote commander cannot operate the stereo system. Replace both batteries with new ones.

2-5. CONNECTIONS

Basic Connection

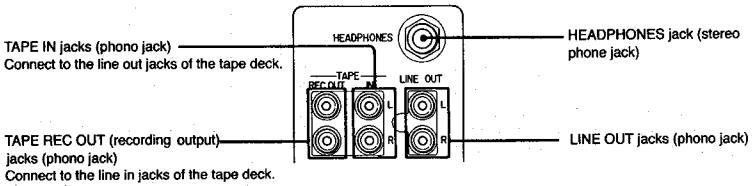
Do's and Dont's of Connection

- Be sure to connect the red plugs to the right (R) jacks and the white plugs to the left (L) jacks.
- Insert the cable connectors as far as they will go into the connectors. A loose connection can cause hum and other noises.
- Disconnect the cord by grasping the plug and pulling it. Never pull the cord itself.

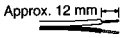


Connecting Other Equipment

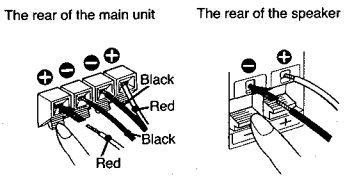
For details on the installation of each piece of extra equipment you want to use, please refer to each equipment's instruction manual.


TAPE IN jacks (phono jack)
Connect to the line out jacks of the tape deck.
TAPE REC OUT (recording output) jacks (phono jack)
Connect to the line in jacks of the tape deck.
HEADPHONES
TAPE
REC OUT
IN
LINE OUT
HEADPHONES jack (stereo phone jack)
LINE OUT jacks (phono jack)

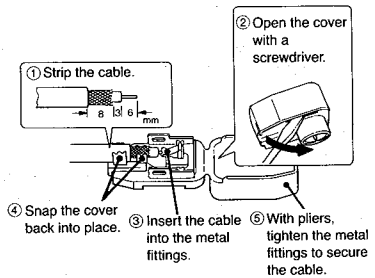
❶ Connecting the Speaker Cords



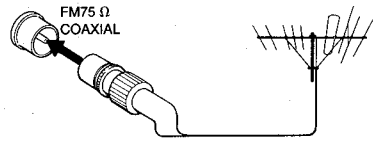
Twist the stripped wires into single strands before inserting them into the jacks. Stray wires may cause shorting and damage to the unit.



❷ Connecting an Outdoor FM Antenna


① Strip the cable.
8
6
mm
② Open the cover with a screwdriver.
④ Snap the cover back into place.
③ Insert the cable into the metal fittings.
⑤ With pliers, tighten the metal fittings to secure the cable.

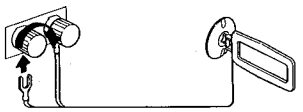
For the customers in Europe



An antenna connector is not supplied with your model. Connect a 75-ohm coaxial cable equipped with a commercially available IEC connector.

❸ Connecting the AM Loop Antenna

AM programs cannot be received without first connecting the supplied AM antenna.



- The AM loop antenna is designed to pick up signals from a particular direction. Adjust the position of the antenna for optimum reception.
- For areas where it is difficult to obtain good AM reception, connect a 6 to 15 meter (20 to 50 feet) insulated wire to the AM antenna terminal (there is no need to disconnect the supplied AM antenna). Run this wire from the terminal to a place which is outside, keeping the greater portion of the wire horizontal whenever possible.

❹ Connecting the Antenna Ground

Hum and other noises may be reduced by adding a grounding wire.

To connect the ground, attach a vinyl-coated wire to the terminal. The other end of the cord should be bare for more than 50cm (19 3/4 inches). Bury it underground, either as it is, or after having connected it to a metal (copper) stick.

WARNING: Be sure to ground against lightning when an external antenna is used. Never connect wires to a gas pipe as an explosion can result.

❺ Connecting the AC Power

Connect the AC power cord to a wall outlet, set the main power switch to ON and replace the cover. This switch is normally left ON and the power switch on the remote commander is used to turn the power switch to OFF. Set the main power switch to OFF only if the unit will not be used for an extended period of time.

For the customers in U.S.A.

Note to CATV System Installers: Article 820-22 of the NEC provides guidelines for proper grounding and specifies that the cable ground should be connected to the grounding system of the building, as close to the entry point of the cable as is practical.

SECTION 3
CIRCUIT DESCRIPTION

3-1 DIGITAL SIGNAL PROCESSOR CXD1079Q (IC1101 AND 1102) PIN FUNCTIONS

The control program of digital signal processor IC1101 is sent from microcomputer IC1015. This IC converts the signal from the A/D IC (IC1101) from serial to parallel. The converted signal is then sent to the external RAM (consisting of IC1103 through IC1110) and read after the required delay time. The digital analog processor also performs matrix processing or filtering. The resultant signal is sent to the D/A IC (IC1009).

▲ : Not used in CDZ-1.

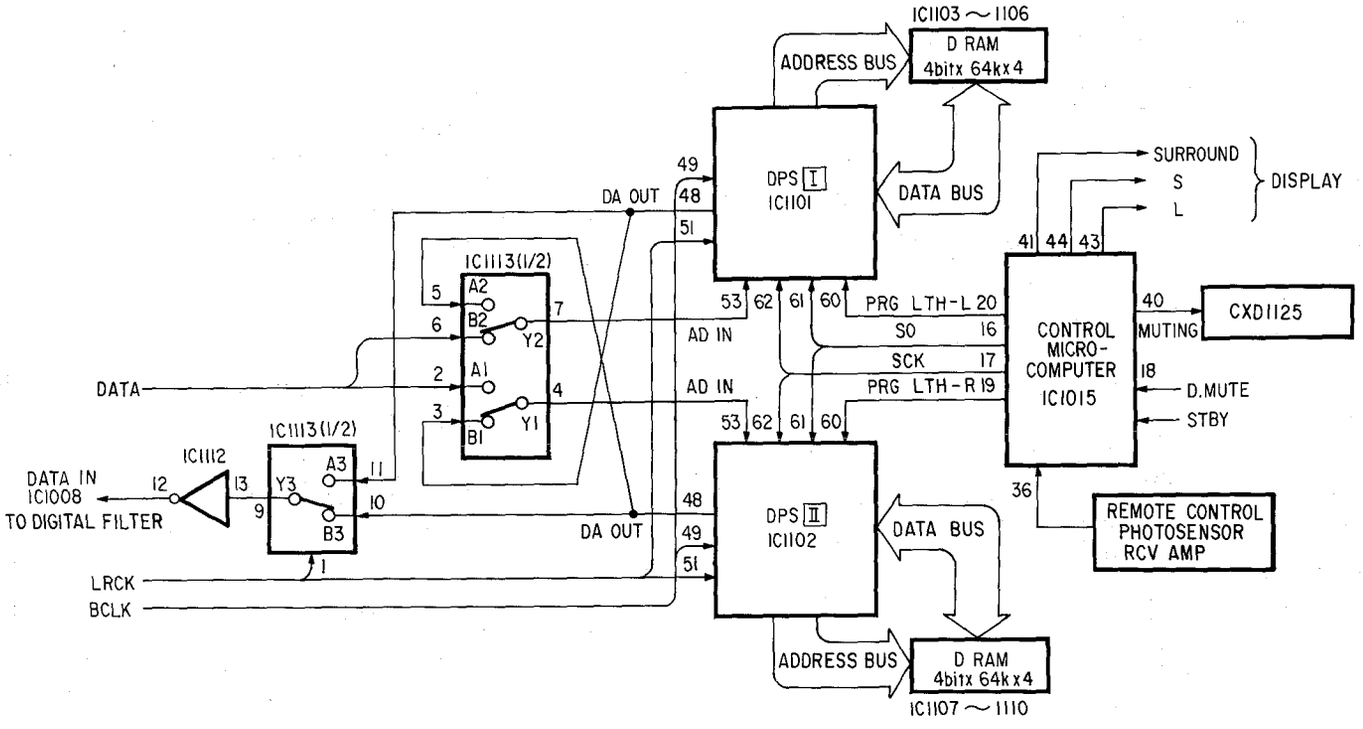
Pin No.	Terminal	I/O	Description
1	D15	I/O	Input and output of the external RAM and latch data.
▲ 2 to 5	$\overline{IN\ 0}$ to $\overline{IN\ 3}$	O	16-bit parallel input strobe signal from external latch circuit. "L" active.
▲ 6 to 9	$\overline{OUT\ 0}$ to $\overline{OUT\ 3}$	O	16-bit parallel output strobe signal sent to external latch circuit. "H" active.
▲ 10	D-DIR	O	Direction signal for external latch circuit's bidirectional buffer. The same signal as $\overline{IN\ 0}$ through $\overline{IN\ 3}$ is output in the input mode.
▲ 11	ADRS-P	O	16-bit parallel port extension signal.
12 to 27	A0 to A15	O	External RAM address output. A0: LSB A0 through A7 are used when the D-RAM is Connected.
28	$\overline{OE}$	O	External RAM $\overline{OE}$ signal.
29	$\overline{WE}$	O	External RAM $\overline{WE}$ signal.
30	$\overline{RAS}$	O	D-RAM $\overline{RAS}$ signal output.
31	$\overline{CAS}$	O	D-RAM $\overline{CAS}$ signal output.
32	VDD	—	Positive (+) power supplies +4.5 to +5.5V (VSS reference). Shorted externally to pin 64.
33	$\overline{M\text{-}CLK}$	O	External IC's clock output.
34	$\overline{MCK\text{-}OUT}$	O	Crystal oscillator output.
35	$\overline{MCK\text{-}IN}$	I	Crystal oscillator input or external clock input.
36	S-MODE	I	External RAM mode selection. "H": S-RAM "L": D-RAM
37	ADS-A	I	Select pin to determine the number of RAM words (6 modes)
38	ADS-B		
39	ADS-C		
40	BKS-A	I	Select pin to determine the number of bit clocks
41	BKS-B		
42	BKS-C		
43	BKS-C		
44	EX-MODE	I	16-bit × 2 serial data transfer mode selsct pin. "H": The signal at LR-CLK and DAB-CLK terminals is input. "L": The signal at LR-CLK and DAB-CLK terminals is output.

	2K	4K	8K	16K	32K	64K
ADS-A	H	L	H	L	H	L
ADS-B	L	L	H	H	L	L
ADS-C	H	H	L	L	L	L

No. of blocks	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64
BKS-A	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H
BKS-B	L	H	H	L	L	H	H	L	L	H	H	L	L	H	H	L
BKS-C	L	H	H	H	H	L	L	L	L	H	H	H	H	L	L	L
BKS-D	L	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L

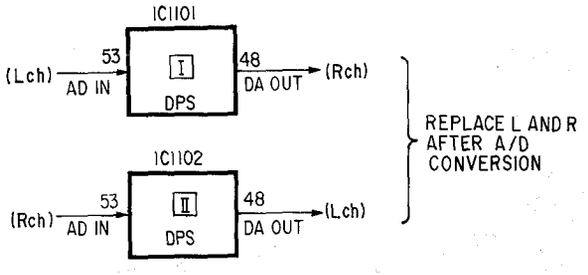
Pin No.	Terminal	I/O	Description
45	VSS	—	Power supply at ground. Shorted externally to pin 80.
46	TEST-CK	I	Test terminal. Set to "L" when this IC is used. Data address counter clock input.
47	TEST-R	I	Test terminal. Set to "L" when this IC is used. Data address counter reset input.
48	DA-OUT	O	16-bit × 2 serial data output's digital audio stereo signal.
49	DA-BCK	I/O	DA-OUT sending bit clock. The DA-OUT signal data is changed at its trailing edge.
▲ 50	W-CLK	O	Word clock signal.
51	LR-CLK	I	Sampling frequency clock. "H": L-CH is transferred. "L": R-CH is transferred.
▲ 52	ADB-CLK	O	Signal data loading clock output. Data is loaded every bit at its trailing edge.
53	AD-IN	I	16-bit × 2 serial data input's digital audio stereo signal.
54	NC	—	No connection (floating). Pay attention to the floating capacity between adjacent pins 53 and 55 when connecting the signal line.
▲ 55	DATA-P	O	Outputs "H" during data access.
▲ 56	OVF16	O	Outputs "H" when a 16-bit internal clipper is operated.
▲ 57	OVF22	O	Outputs "H" when 22-bit internal data overflows.
▲ 58	ZERO-P	O	Outputs "H" during zero instruction execution.
59	MUTE	I	DA-OUT is set to "L" and muted. "H" active.
60	$\overline{\text{PRG-LTH}}$	I	Serial input PRG-DT data is sent in parallel to the latch circuit. "L": Transferred. "H": Latched.
61	PRG-DT	I	Microprogram transfer serial data input.
62	PRG-CK	I	Microprogram transfer clock input. PRG-DT data is loaded at the leading edge.
63	F-MODE	I	Inhibits the transfer of a program to RAM and enables data access according to the zero instruction. "H" active.
64	VDD	—	Positive (+) power supplies +4.5V to +5.5V (VSS reference). Shorted externally to pin 32.
65 to 79	D0 to D14	I/O	Input and output of external RAM and latch data.
80	VSS	—	Power supply at ground. Shorted externally to pin 45.

3-2. OUTLINE OF DUAL DPS CONTROL CIRCUIT

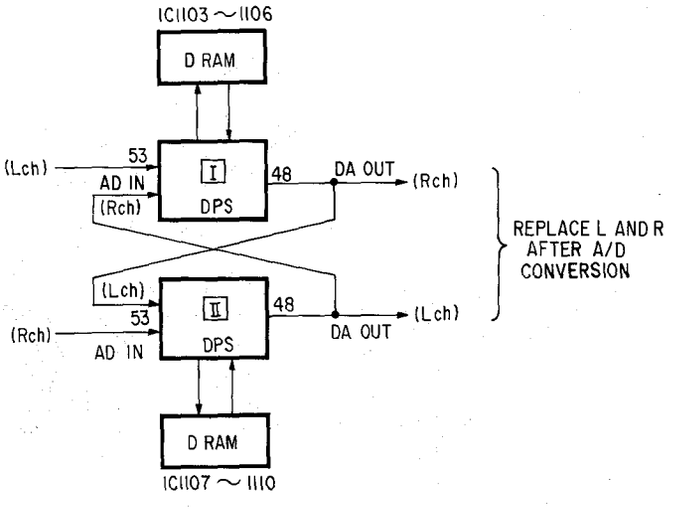


3-3. AUDIO SIGNAL FLOW DURING PLAY

• SURROUND OFF : Not Passed through the D RAM.



• SURROUND ON : Passed through the D RAM.



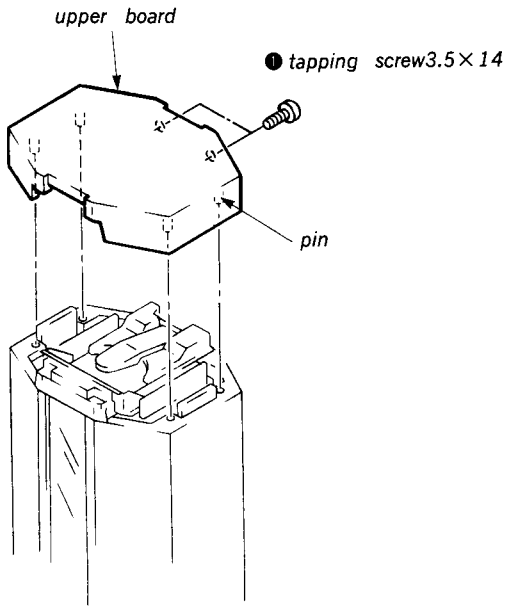
SECTION 4
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

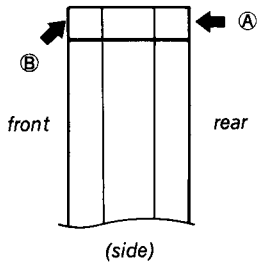
UPPER BOARD

Handling Cautions

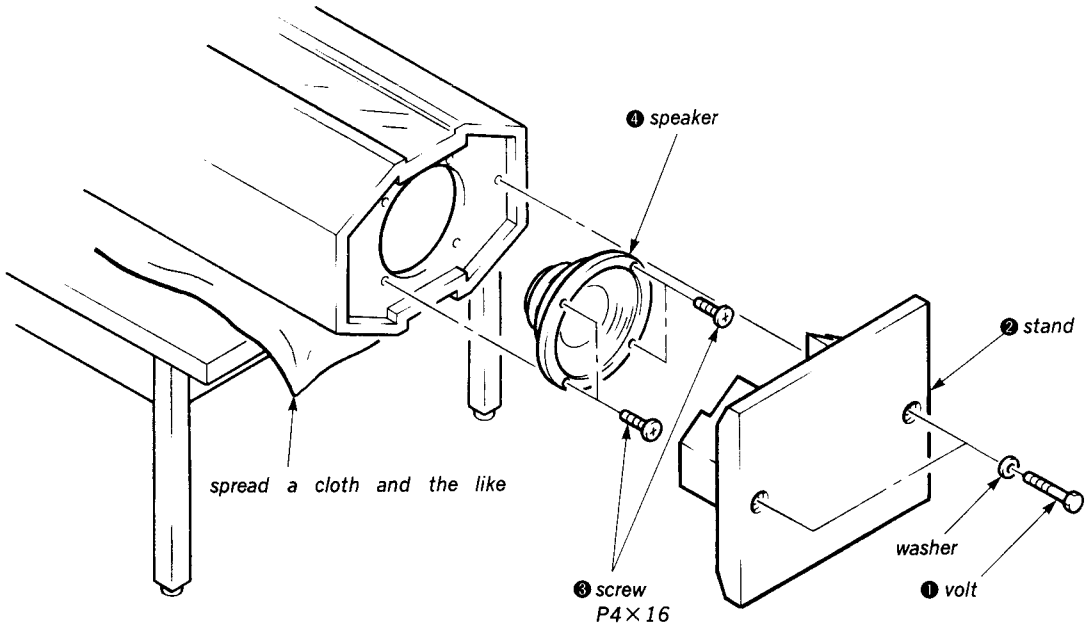
- *Do not use a screwdriver except aor reroving the top plate fixing screw.*



❷*Strike the front of top plate with your hand in the direction indicated by arrow B while holding the rear of a top plate with the palm of the hand in the direction of arrow A to remove the top plate.*

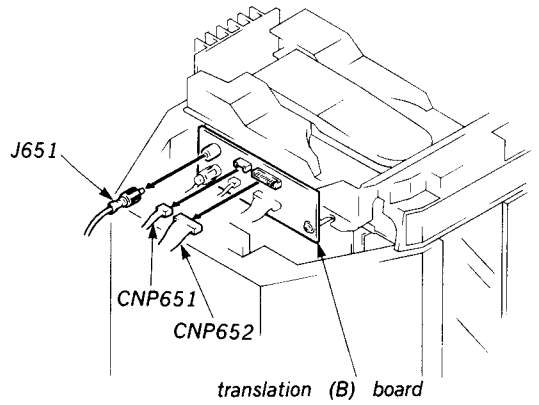


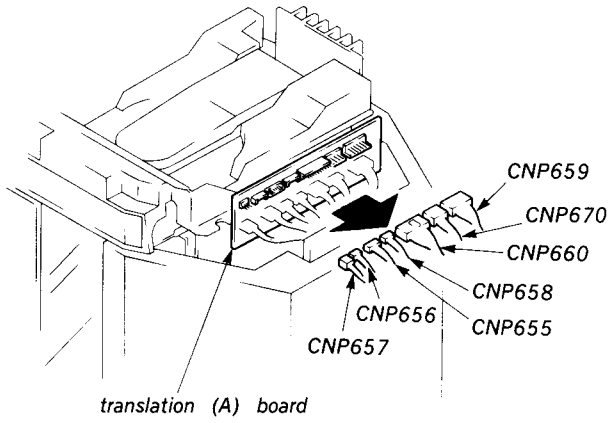
SPEAKER



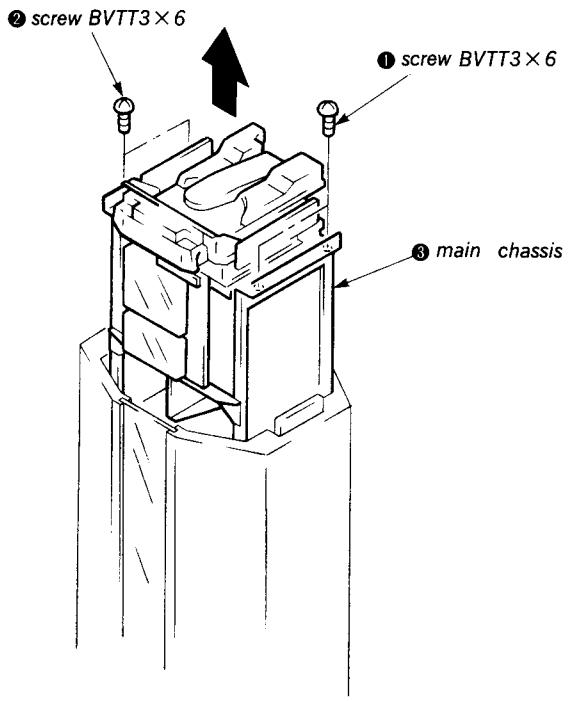
MAIN CHASSIS (1)

• *Remove the connector*



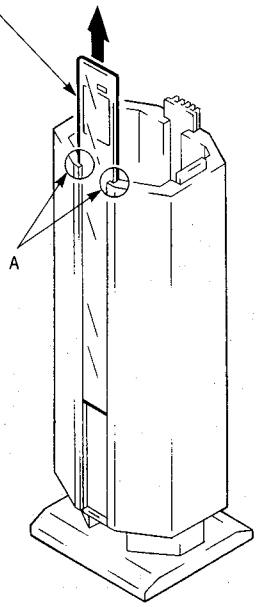


MAIN CHASSIS (2)



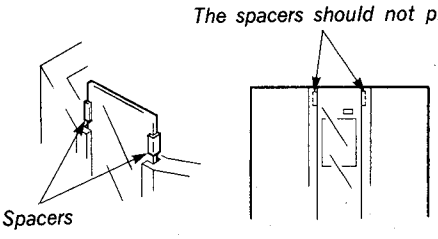
ORNAMENT GLASS

Pull the ornament glass upward to remove it.

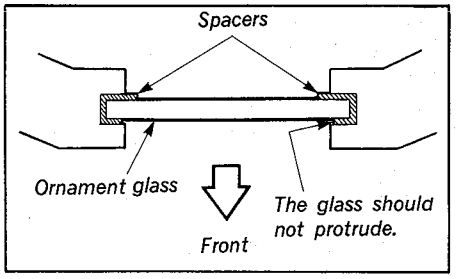


Assembling

1) *Put both sides at the top of the ornament glass between the spacers.*
2) *Insert the spacers into the cabinet's groove together with the ornament glass as shown in the figure below.*

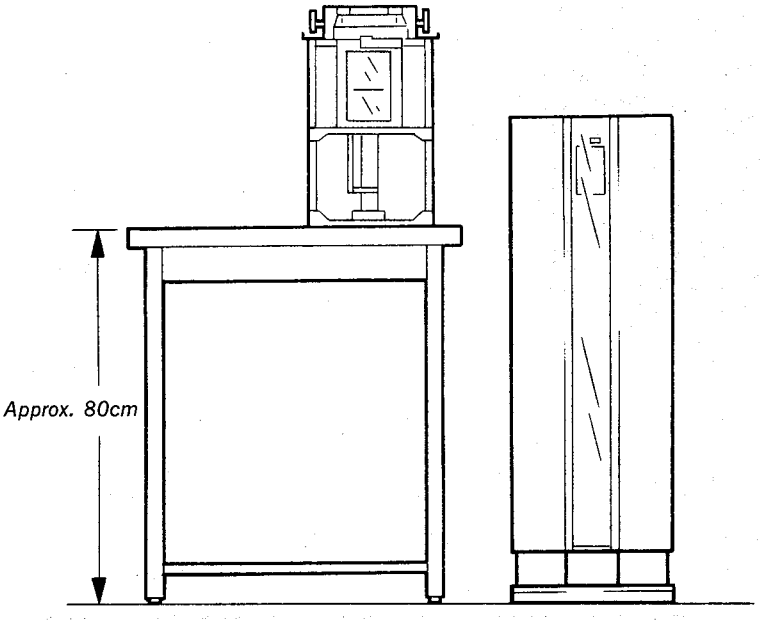


Details at portion A

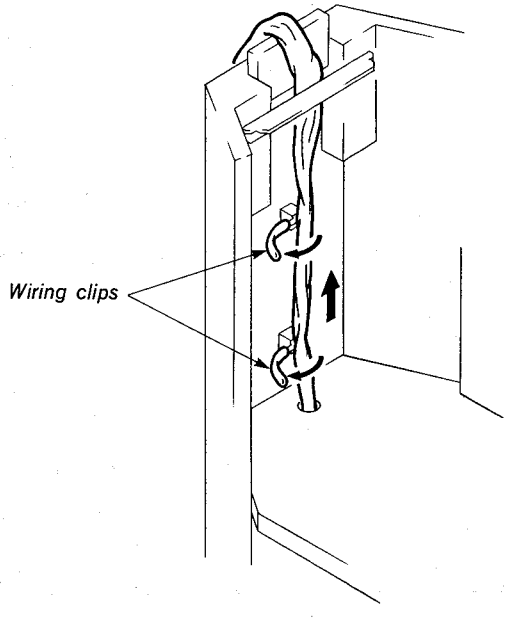


CONNECTING DURING INSPECTION

1) *To operate the main unit which is removed from the cabinet, put the unit on a working table of approximately 80cm in height because it has a short lead wire.*



2) *Remove the four wiring clips in the cabinet and pull the lead wire out approximately 10cm. (Never pull out it forcefully.)*
3) *Connect the connectors which are removed from translation boards (A) and (B).*



SECTION 5
ADJUSTMENTS

Note : This unit can be completely operated using a remote controller. Use remote commander RM-Z1 to make adjustment.

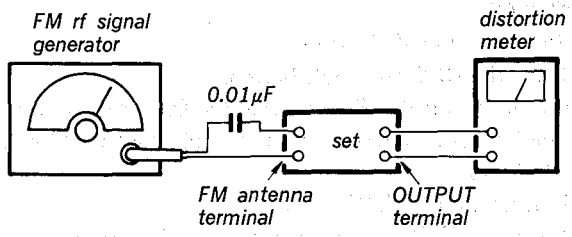
5-1. TUNER SECTION

Servicing Note

The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

FM Discriminator Alignment

Setting:



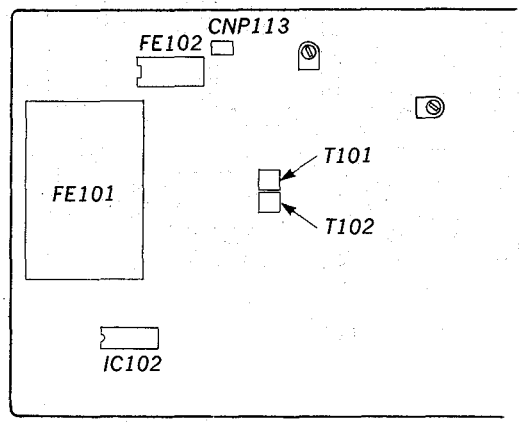
Carrier frequency:	*98MHz*
Modulation:	*1kHz, 75kHz deviation (100%)*
Output level:	*1mV (60dB)*

Procedure:

1. Tune the set 98MHz.
2. The connect CNP113 (NULL test point) with VOM.
3. Adjust the core (primary-side) of T101 for 0V reading on VOM.
4. Adjust the core (secondary-side) of T102 for minimum distortion.

Note: When replacing the ceramic filter, perform this alignment.
Repeat the secondary-side and primary-side alignments several times.

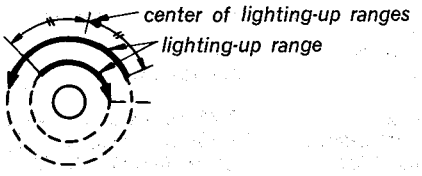
Adjustment Location: tuner board



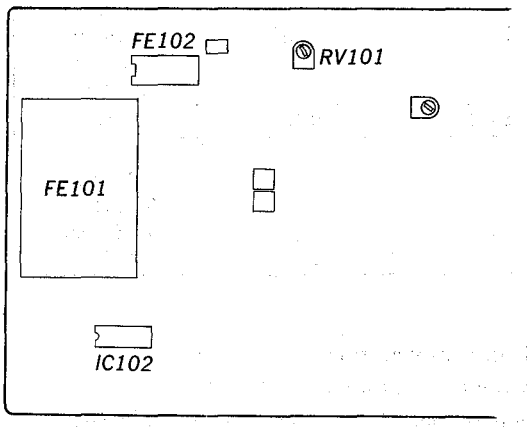
VCO Adjustment

Procedure:

1. Tune the set to the FM stereo signal.
2. Tune RV101 clockwise or counterclockwise and memorize the lighting-up range of the stereo lamp.
3. Seccure RV101 at the center of the lighting-up range of both turns as shown below.

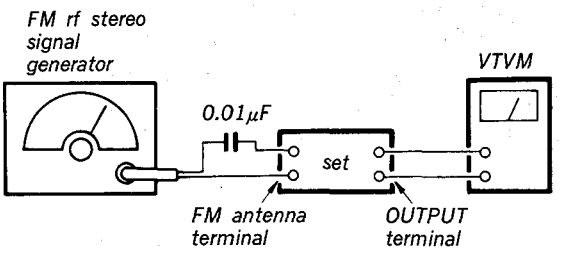


Adjustment Location: tuner board



FM Stereo Separation Adjustment

Procedure:

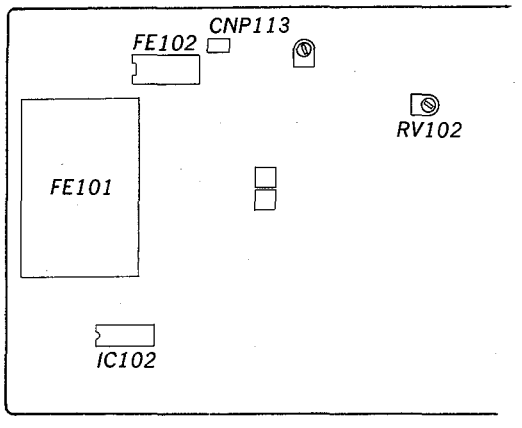


Carrier frequency: 98MHz
Output level: 1mV (60dB)
Modulation
Audio 1kHz: 33.75kHz deviation (45%)
Sub channel 38kHz: 33.75kHz deviation (45%)
Pilot signal 19kHz: 7.5kHz deviation (10%)

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV102 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV102 for minimum reading.

L-CH Stereo separation: Ⓐ — Ⓑ
R-CH Stereo separation: Ⓒ — Ⓓ
The separations of both channels should be equal.

Adjustment Location: tuner board



5-2. CD SECTION

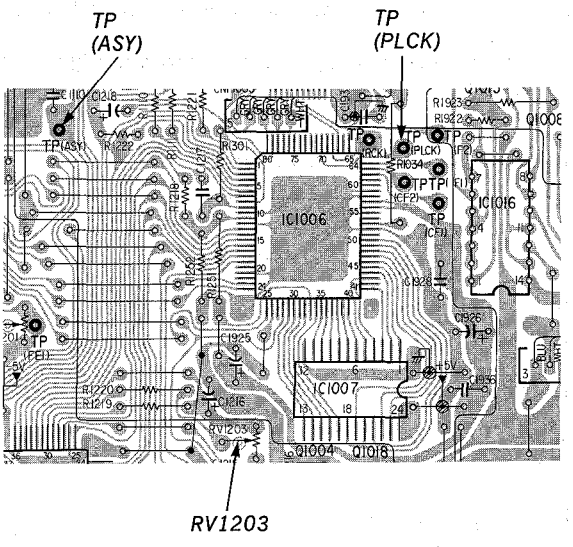
1. Perform adjustments in the order given.
2. Use YEDS-18; Part No. 3-702-101-01.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Free Run Frequency Check

Procedure:

1. Short the TP(ASY) point.
2. Press the OPEN/CLOSE button.
3. Check the TP($\overline{\text{PLCK}}$) point that the frequency counter reading is 4.3218MHz. If it is not, adjust RV1203 for 4.3218MHz.
4. Release the TP(ASY) point.
5. Put disc (YEDS-18) in and press PLAY button. Confirm that the reading on frequency counter is 4.3218MHz.

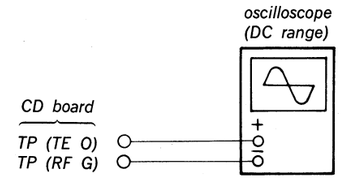
Adjustment Location: CD board



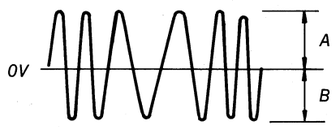
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

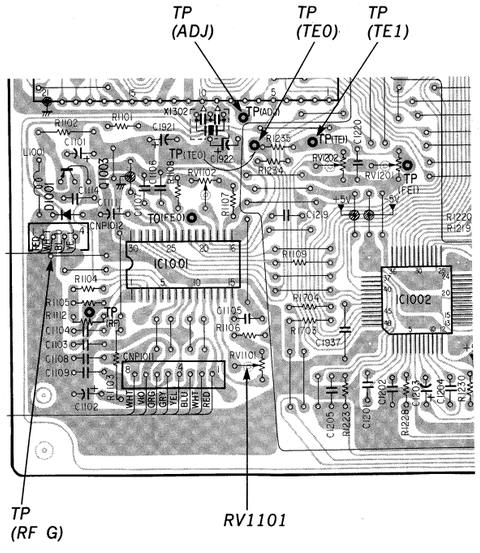


1. Short the TP (ADJ), TP (TE1) points.
2. Connect oscilloscope to TP (TE0), TP (RF G) points.
3. Turn POWER switch on.
4. Put disk (YEDS-18) in and press ▷ button.
5. Press the ◀◀ FF or ▶▶ REW button.
6. Adjust RV1101 so that the traverse waveform is symmetrical above and below.



A=B
The difference between A and B is within 5%.

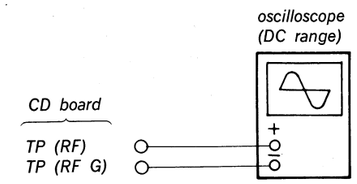
Adjustment Location: CD board



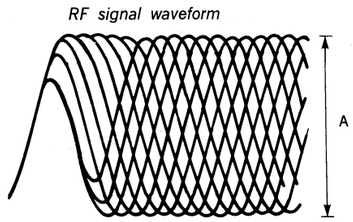
Focus Bias Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

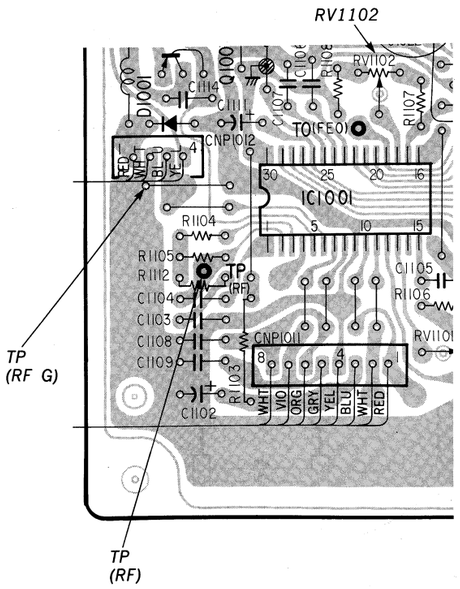


1. Connect oscilloscope to test points TP (RF) and TP (RF G).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press ▶ ❚❚ button.
4. Adjust RV1102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



A= 1.2V ± (0.2Vp-p)

Adjustment Location: CD board



Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up followup (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Symptoms \ Gain	Focus	Tracking
● The time until music starts becomes longer for STOP ➡▷ PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP ➡▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	—	low
● Disc table opens shortly after STOP ➡▷ PLAY.	low or high	—
● Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
● More noise during 2-axis device operation.	high	high

The followi
—Primary A

Note: Since e
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the ori

Procedure:

CL
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1. Keep th
If th
2. Insert c
button.
3. Connec
4. Adjustr
in the f

● Incorrect
adjusted w

s/Tracking Gain Adjustment

equency response analyzer is necessary in order to rm this adjustment exactly.

ever, this gain has a margin, so even if it is slightly here is no problem. Therefore, do not perform this tment.

s/tracking gain determines the pick-up followup cal and horizontal) relative to mechanical noise and anical shock when the 2-axis device operate.

ever, as these reciprocate, the adjustment is at the where both are satisfied.

/hen gain is raised, the noise when the 2-axis device perates increases.

/hen gain is lowered, mechanical shock and skipping ccurs more easily.

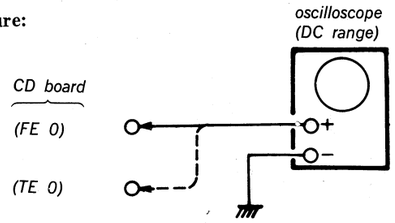
/hen gain adjustment is off, the symptoms below ppear.

Gain / ptoms	Focus	Tracking
ne time until music starts comes longer for STOP ➡▷ PLAY or automatic lection (⏮, ⏭ buttons essed.) (Normally takes out 1 seconds.)	low	low or high
usic does not start and sc continues to rotate for TOP ➡▷ PLAY or tomatic selection. (⏮, ⏭ buttons pressed.)	—	low
sc table opens shortly ter STOP ➡▷ PLAY.	low or high	—
ound is interrupted during LAY. Or time counter splay stops progressing.	—	low
ore noise during 2-axis evice operation.	high	high

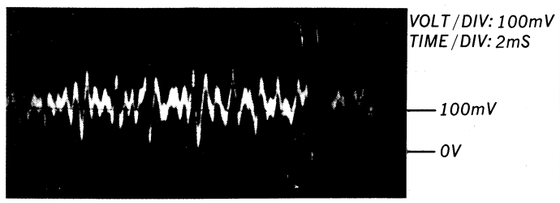
The following is a simple adjustment method.
—Primary Adjustment—

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the primary adjustment are only a little different, return the controls to the original position.

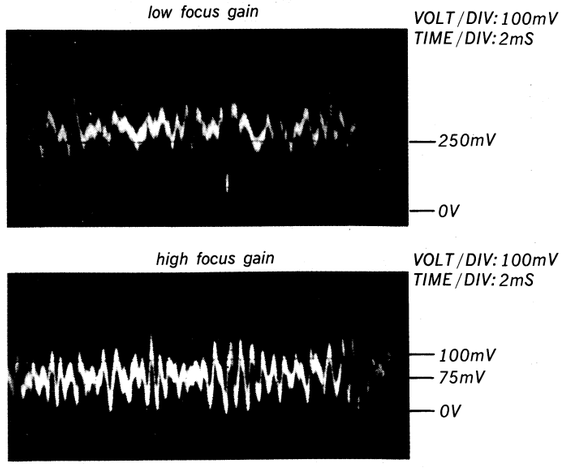
Procedure:



1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18 fifth music) and press ▶ PLAY button.
3. Connect oscilloscope to CD board TP (FE0).
4. Adjustment RV1201 so that the waveform is as shown in the figure below. (focus gain adjustment)

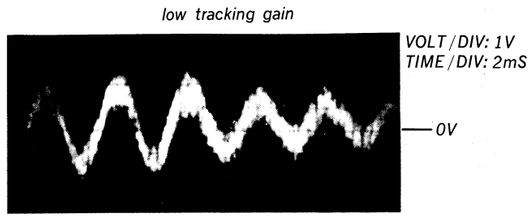


- Incorrect Examples (DC level changes more than on adjusted waveform)

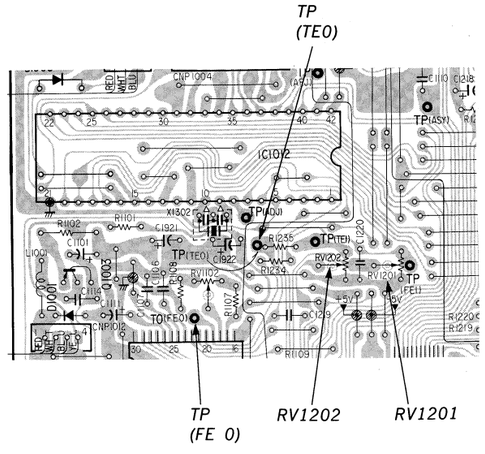


5. Connect oscilloscope to CD board TP (TE0).
6. Adjust RV1202 so that the waveform is as shown in the figure below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)

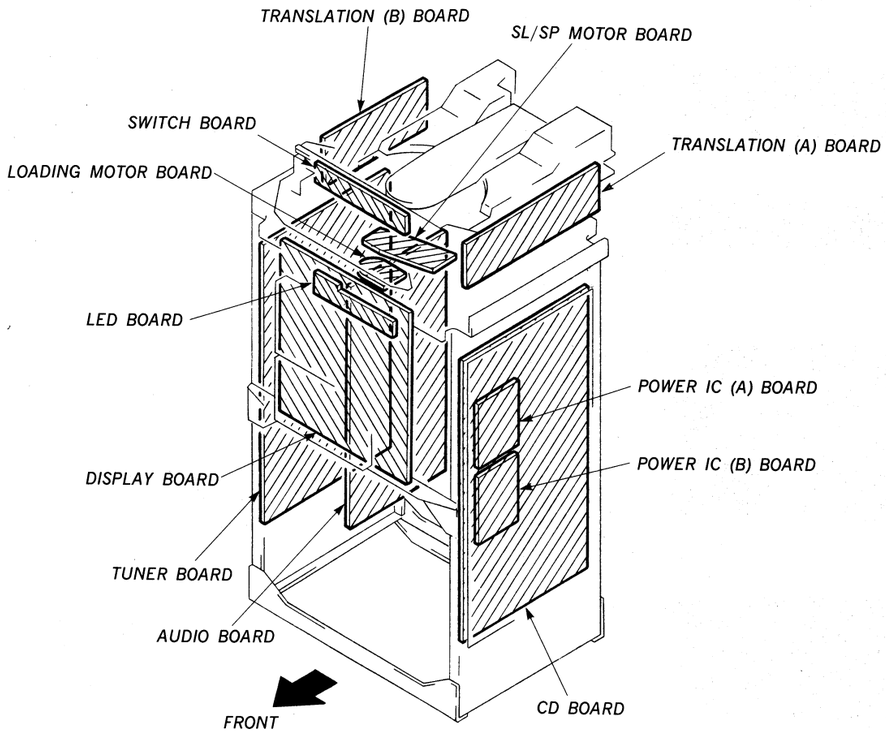


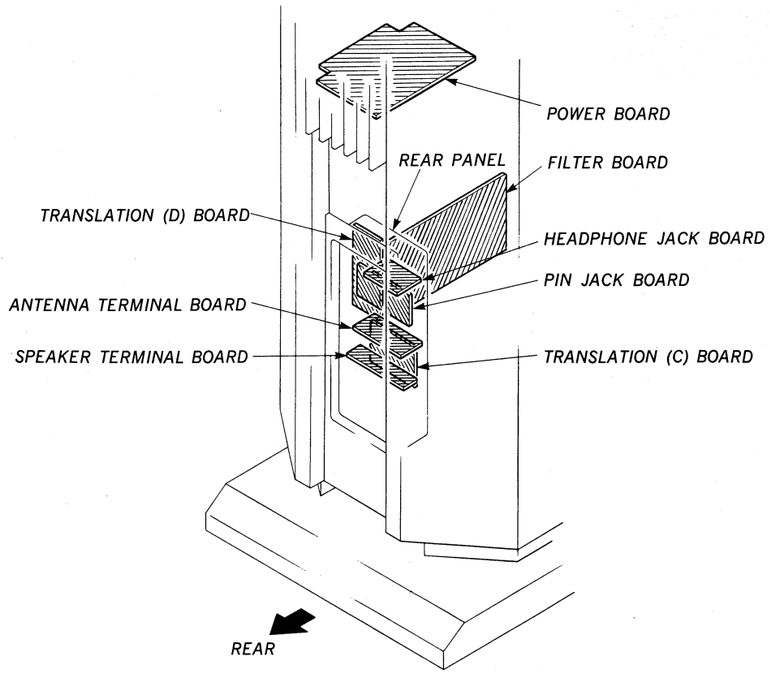
Adjustment Location: CD board



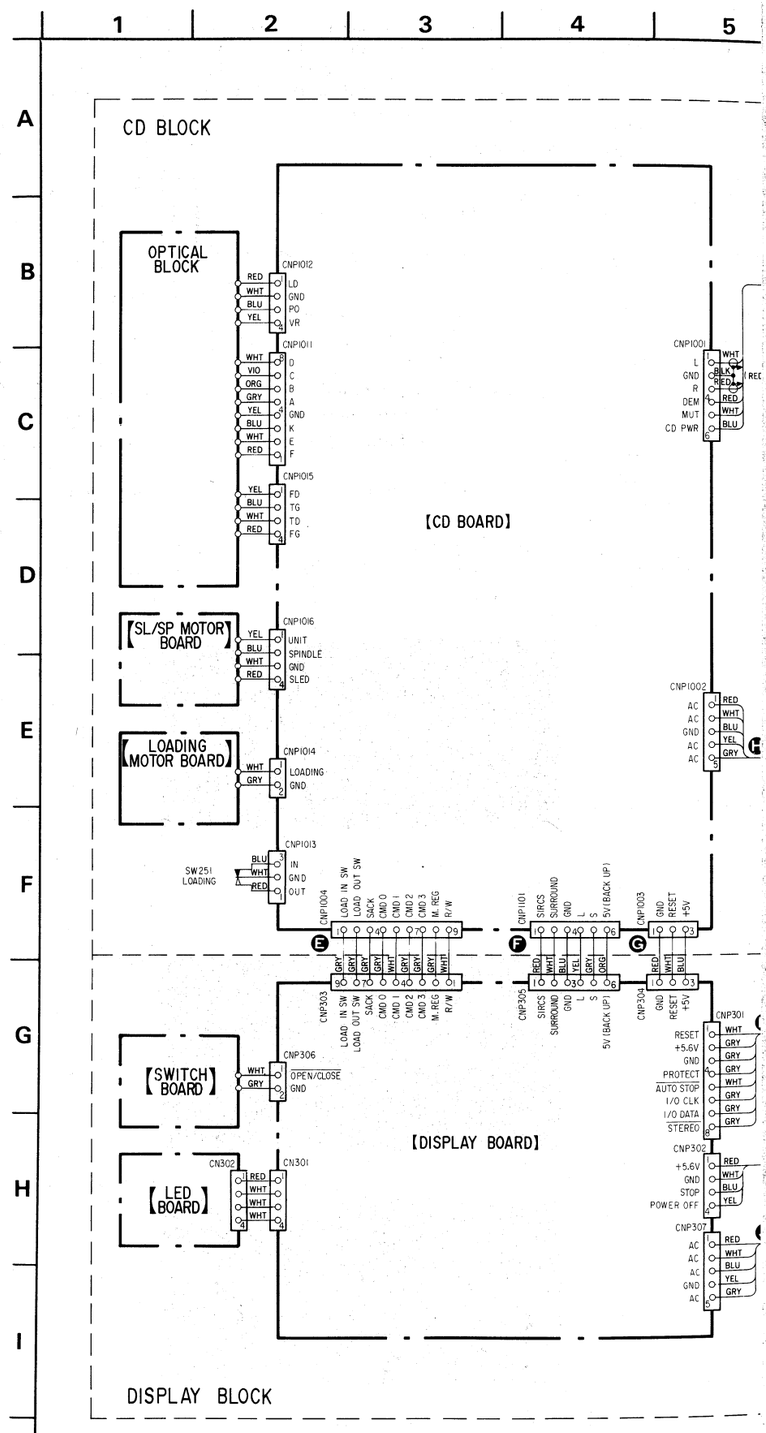
SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION





6-2. FRAME SCHEMATIC DIAGRAM



C DIAGRAM

3 4 5 6 7 8 9 10 11 12 13 14 15

TUNER BLOCK

【CD BOARD】

【TUNER BOARD】

AUDIO, POWER SUPPLY BLOCK

【DISPLAY BOARD】

【AUDIO BOARD】

【POWER IC (A) BOARD】

【POWER IC (B) BOARD】

【POWER BOARD】

【TRANSLATION (B) BOARD】

【TRANSLATION (D) BOARD】

【TRANSLATION (A) BOARD】

【TRANSLATION (C) BOARD】

【PIN JACK BOARD】

【HEADPHONE JACK BOARD】

【SPEAKER TERMINAL BOARD】

【FILTER BOARD】

ANTENNA TERMINAL BOARD

T902 POWER TRANSFORMER

SP901 WOOFER

BP904

POWER SW901

J602 J603 J605

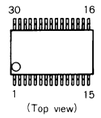
TM601 TM604

WEST GERANY

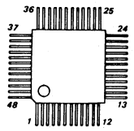
AEP

6-3. SEMICONDUCTOR LEAD LAYOUTS

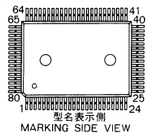
CXA1081M



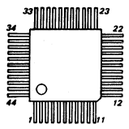
CXA1082AQ



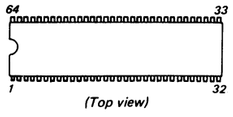
CXD1079Q
CXD1125Q



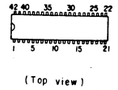
CXD1088Q
MSM6402A-201GS-K



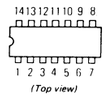
CXP5016H-206S
μPD75104CW-091



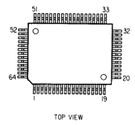
CX789
MSM6404A-180RS



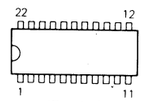
CX7925B
TC74HC00P
TC74HC02P
TC74HC04P



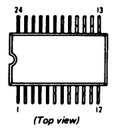
HD614022FG60
HD614080FA96



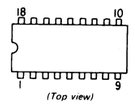
LA1265
LA3401



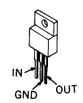
LC3516AML-15



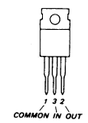
MB81464-10



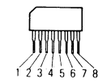
MC7805CT
M5F7815



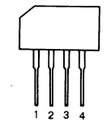
MC7905CT
MC7915CT



M5230L-A

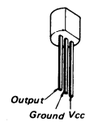


M5231TL

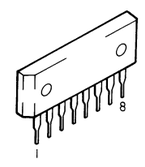


NE5532P
μPC4570C

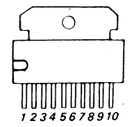
NJM78L05A



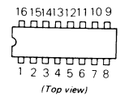
STA341M



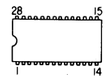
TA7256P



TC4528BP
TC74HC157P



TDA1541-N5



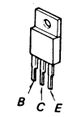
BA1A3Q
BN1A4M
DTC143TS
DTC143XS
DTC144ES
2SA1346
2SC634PS
2SC2669
2SC3399
2SC3400

2SA988-F

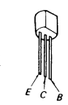
2SA1175
2SC2785

2SB734
2SD774

2SB1094-L
2SD1585-K



2SC3112



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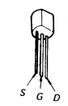
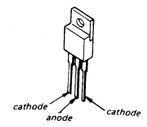
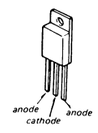
2SK246Y



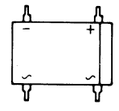
CTU-22R



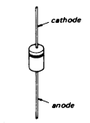
CTU-22S



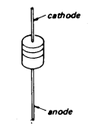
DF02M



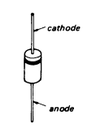
EQB01-06



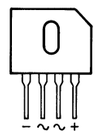
HZS30-3L
HZS6C3L
1SS133



HZ4ALL
1SS131
1SS132
10E2N

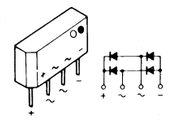


KBU4D

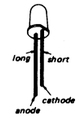


MARKING SIDE VIEW

S1VB40

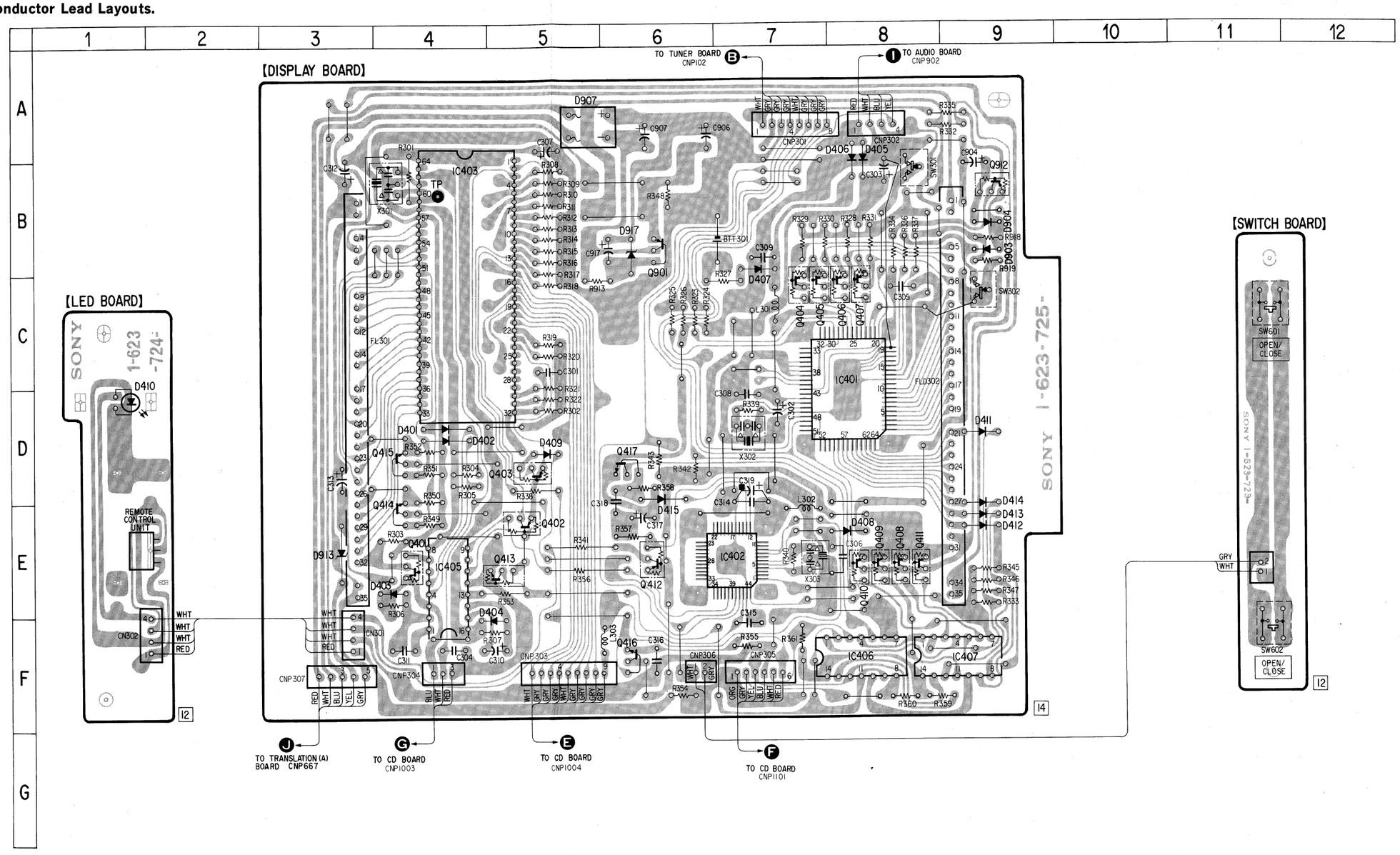


SEL1210W



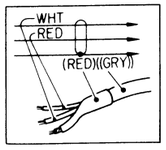
6-4. PRINTED WIRING BOARDS —DISPLAY SECTION—

● Refer to page 25 for Semiconductor Lead Layouts.



Note:

- Color code or sleeving over the end of the jacket.

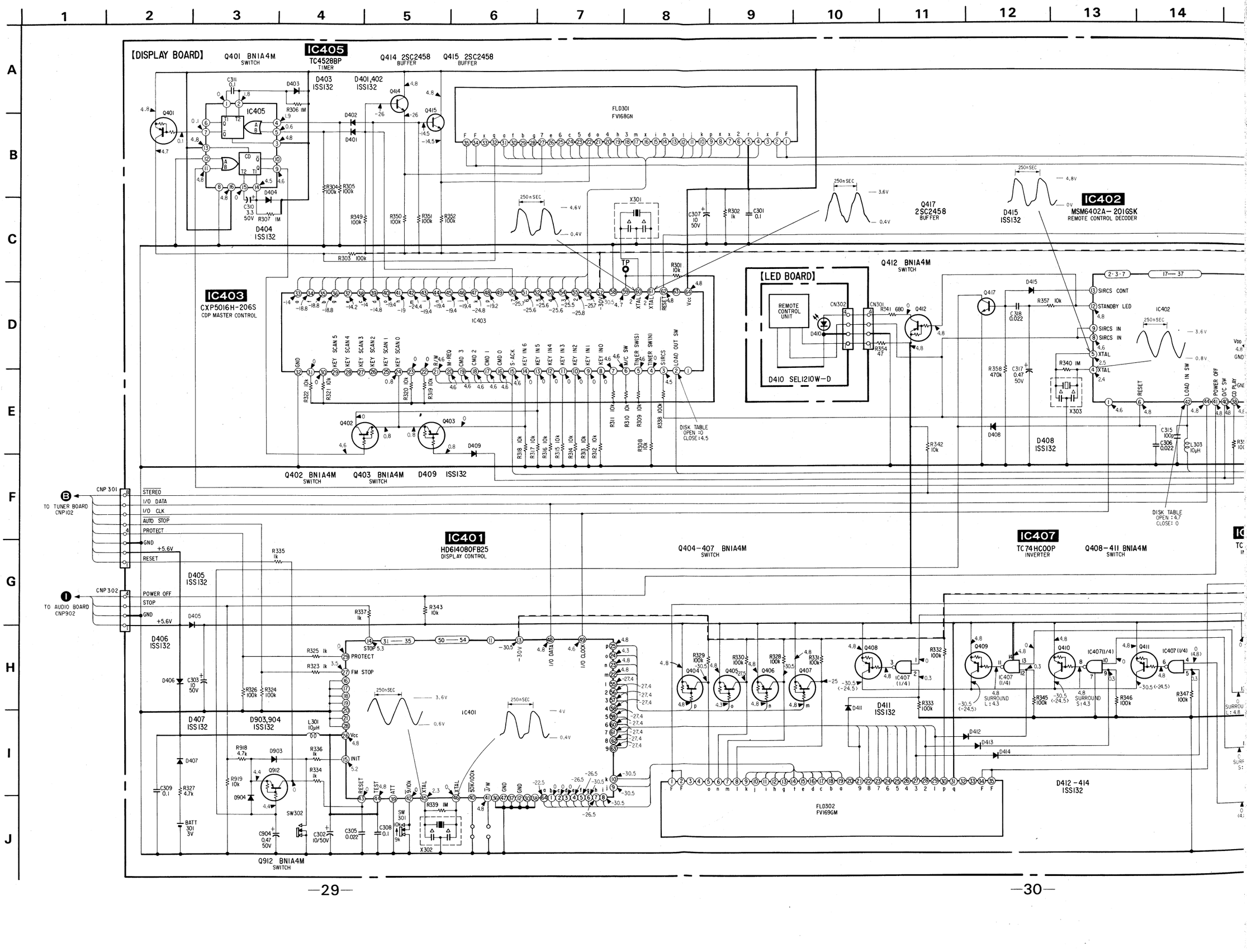


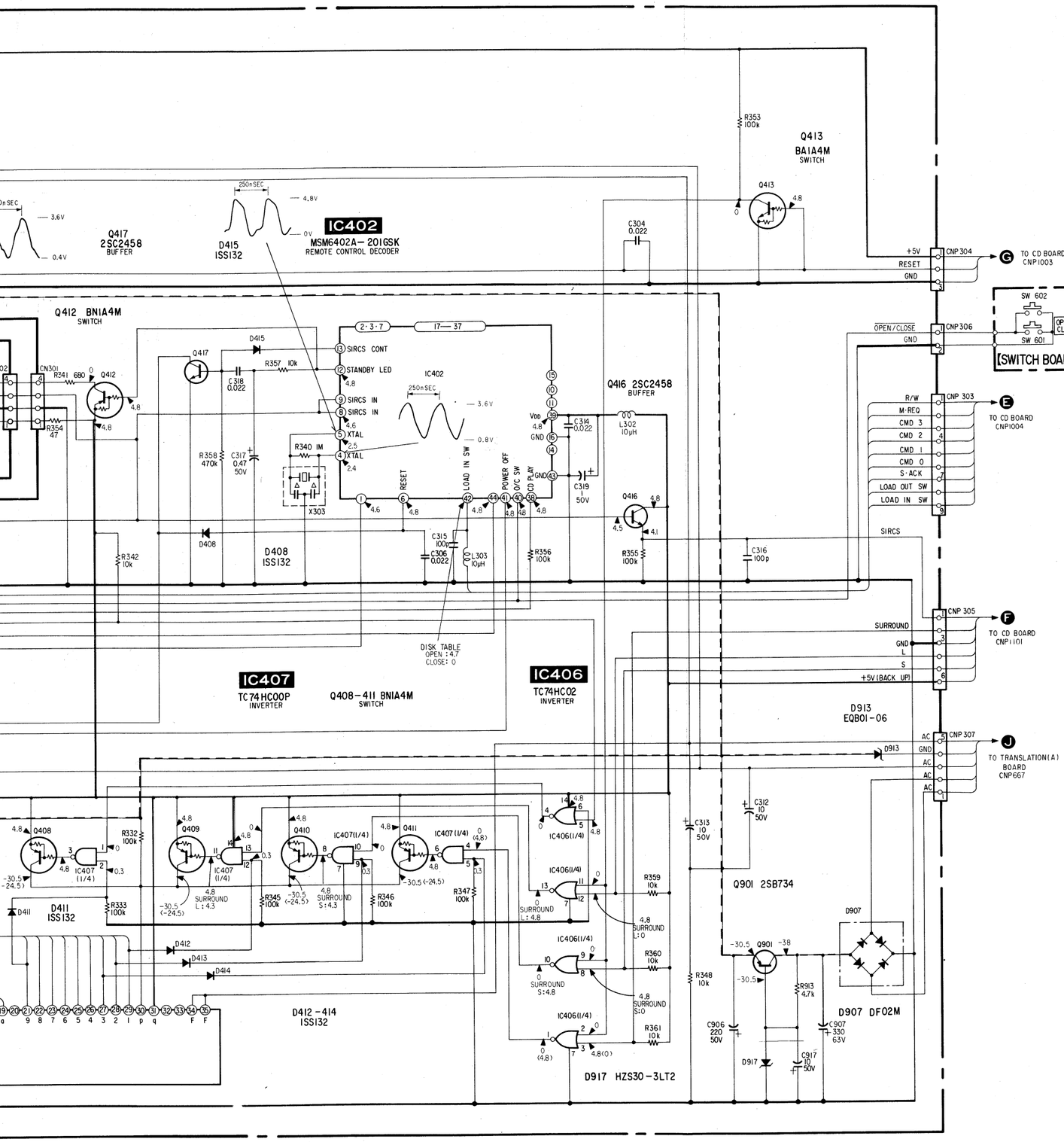
- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.

● **Semiconductor Location**

Ref. No.	Location	Re. No.	Location	Ref. No.	Location
D401	D-4	D904	B-9	Q405	C-7
D402	D-4	D907	A-5	Q406	C-8
D403	E-4	D913	E-3	Q407	C-8
D404	F-5	D917	B-6	Q408	E-8
D405	A-8			Q409	E-8
D406	A-8	IC401	C-8	Q410	E-8
D407	B-7	IC402	E-7	Q411	E-8
D408	E-8	IC403	B-4	Q412	E-6
D409	D-5	IC405	E-4	Q413	E-5
D410	D-1	IC406	F-8	Q414	E-4
D411	D-9	IC407	F-9	Q415	D-4
D412	E-9			Q416	F-6
D413	E-9	Q401	E-4	Q417	D-6
D141	E-9	Q402	E-5	Q901	B-6
D415	D-6	Q403	D-5	Q912	B-9
D903	B-9	Q404	C-7		

6-5. SCHEMATIC DIAGRAM —DISPLAY SECTION—





Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: SURROUND OFF mode
  < >: SURROUND ON mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
SW601 SW602	OPEN/CLOSE	CLOSE
SW301	9k/10k	ON (9k)

6-6. PRINTED WIRING BOARDS
—CD SECTION—

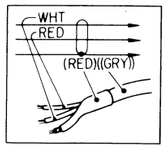
● Refer to page 25 for Semiconductor Lead Layouts.

● **Semiconductor Location**

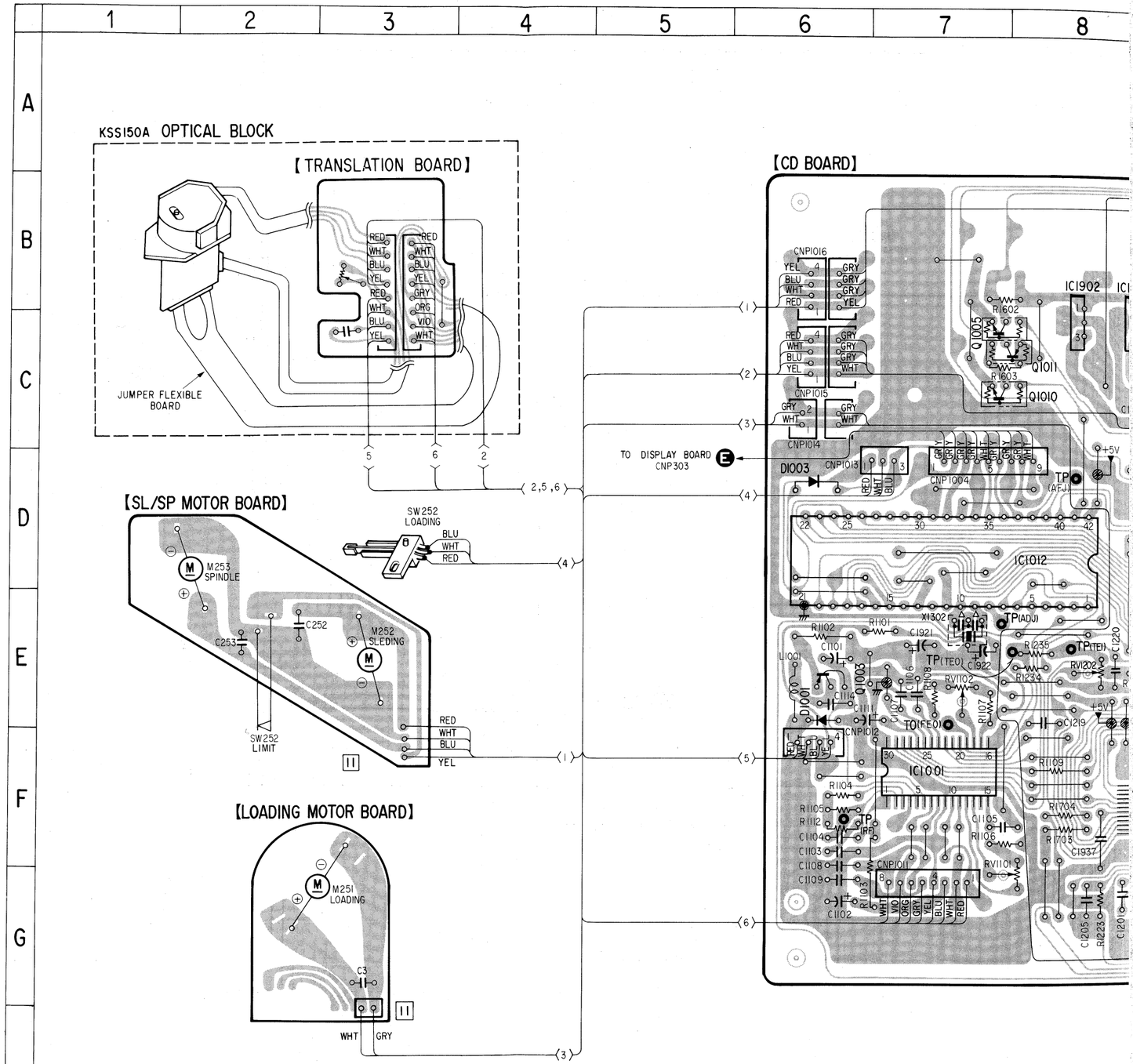
Ref. No.	Location	Ref. No.	Location
D1001	E-6	Q1007	D-12
D1002	C-11	Q1008	D-12
D1003	D-6	Q1009	D-12
D1901	D-13	Q1010	C-8
D1902	D-13	Q1011	C-8
		Q1013	D-11
IC1001	F-7	Q1014	F-13
IC1002	F-9	Q1015	B-13
IC1003	G-10	Q1016	E-13
IC1004	F-12	Q1017	D-13
IC1006	D-10	Q1018	F-11
IC1007	E-10		
IC1008	C-10		
IC1009	C-10		
IC1010	C-11		
IC1012	D-7		
IC1015	F-15		
IC1016	D-11		
IC1101	B-15		
IC1102	E-15		
IC1103	C-16		
IC1104	C-16		
IC1105	C-16		
IC1106	B-16		
IC1107	D-16		
IC1108	E-16		
IC1109	E-16		
IC1110	F-16		
IC1112	D-15		
IC1113	C-15		
IC1114	F-15		
IC1901	B-8		
IC1902	B-8		
IC1903	B-9		
IC1904	F-13		
IC1905	C-13		
IC1906	F-14		
Q1001	F-14		
Q1002	F-14		
Q1003	E-6		
Q1004	F-10		
Q1005	C-7		
Q1006	C-12		

Note:

● Color code or sleeving over the end of the jacket.



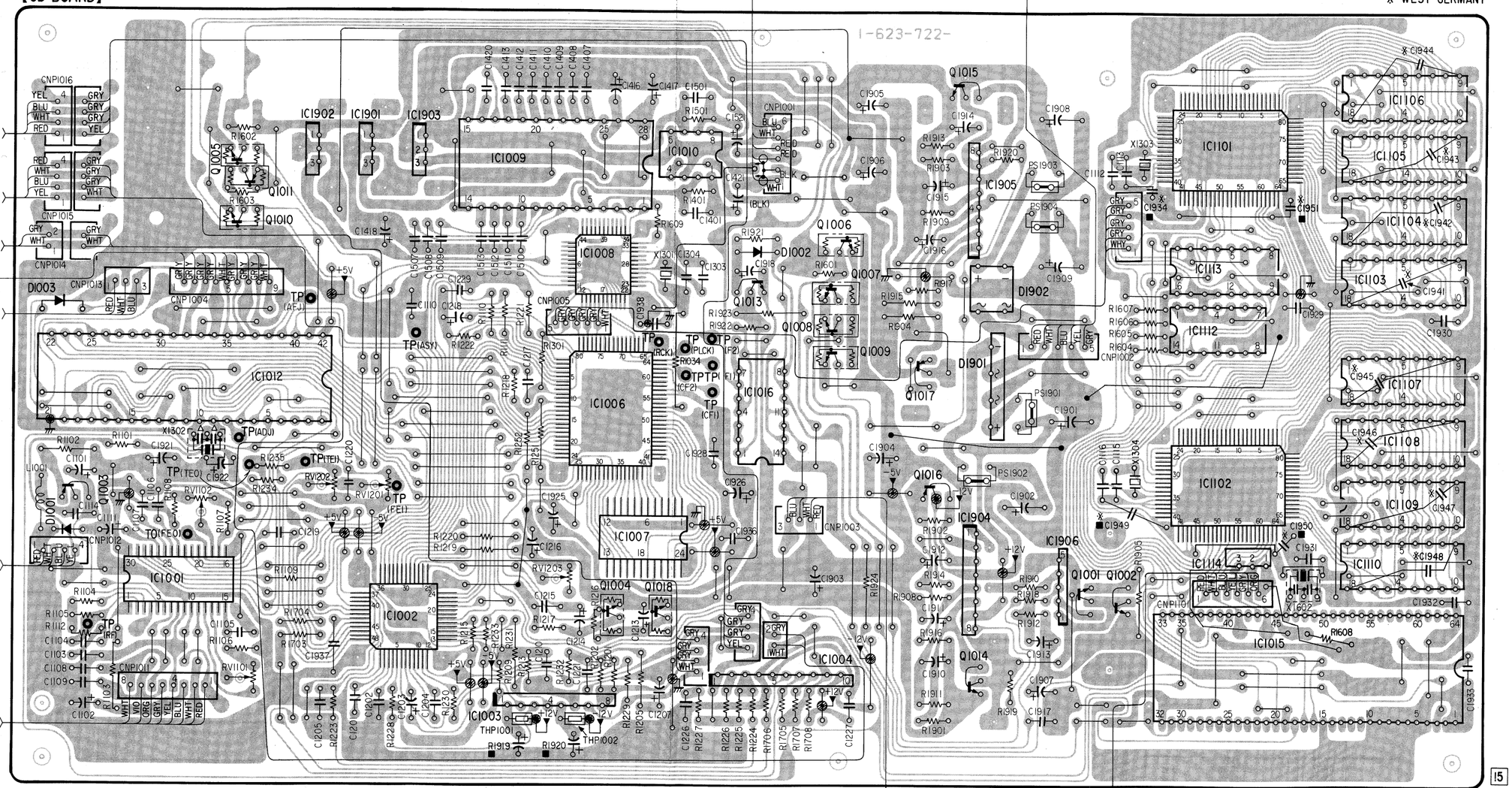
● ○—— : parts extracted from the component side.
● ●—— : parts extracted from the conductor side.
● ■ : parts mounted on the conductor side.
● : Jumper wire connected to the ground pattern on the component hole.
● : Jumper wire connected to the ± B pattern on the component hole.



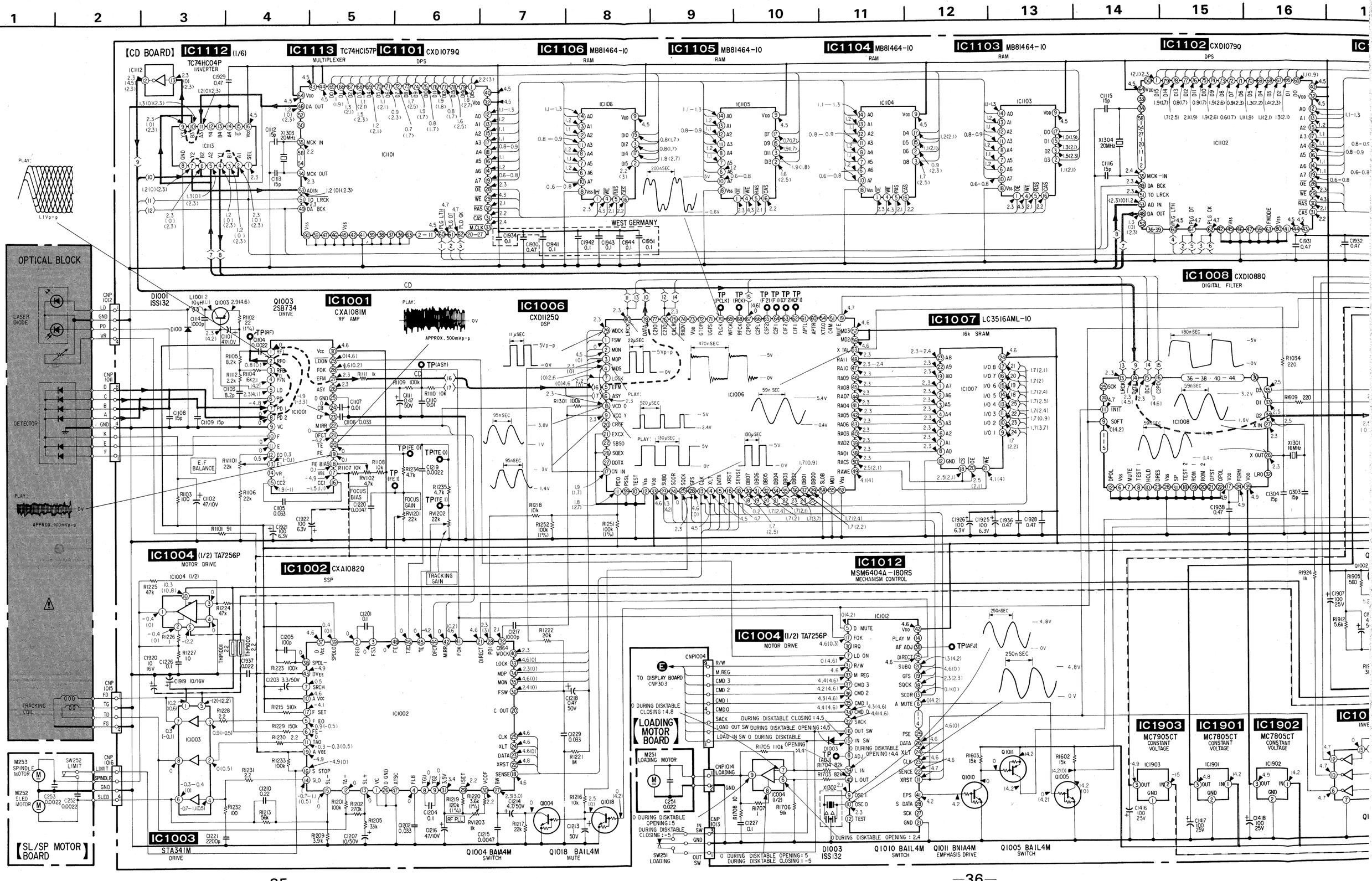
6 7 8 9 10 11 12 13 14 15 16 17

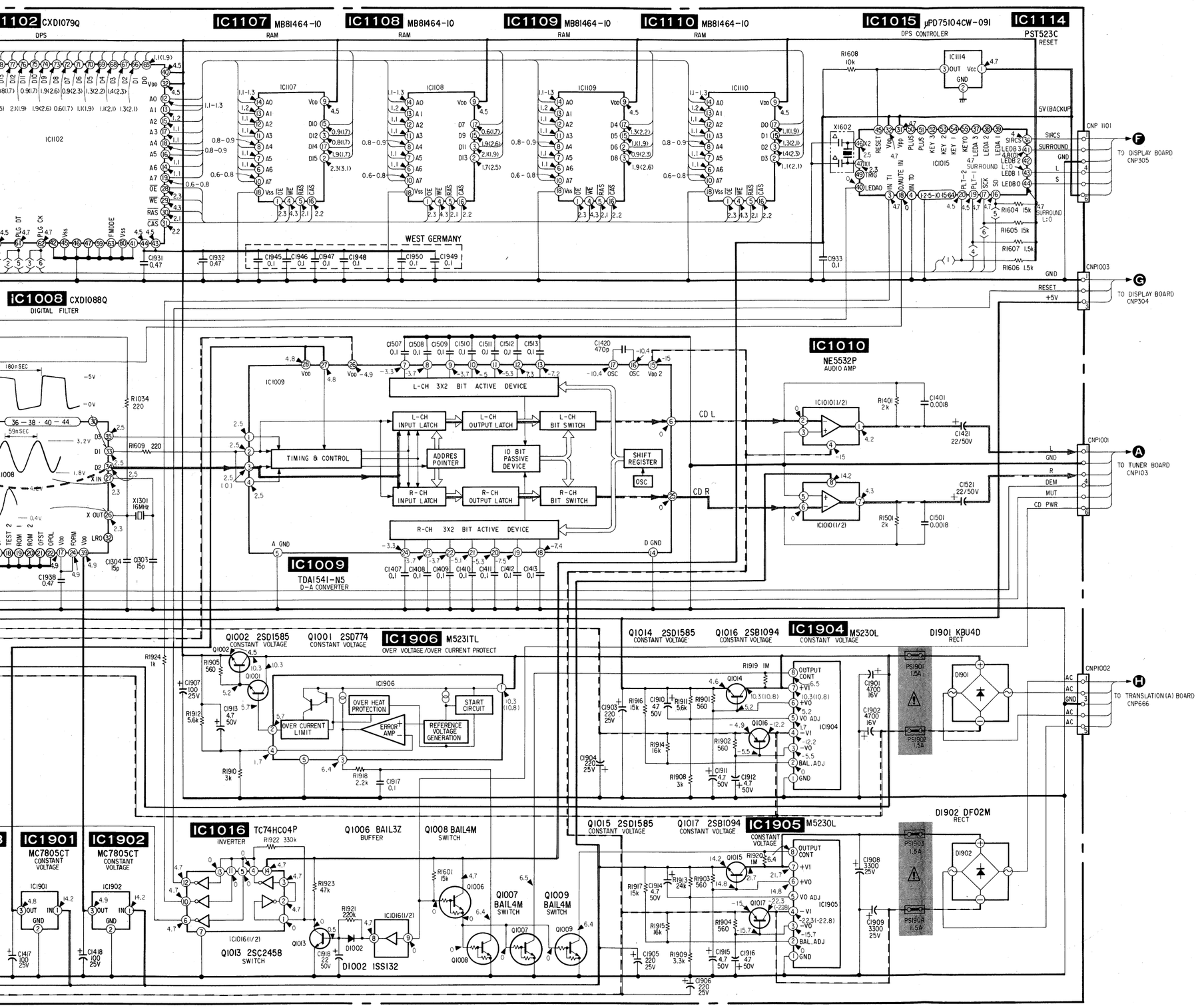
【CD BOARD】

※: WEST GERMANY



6-7. SCHEMATIC DIAGRAM —CD SECTION—





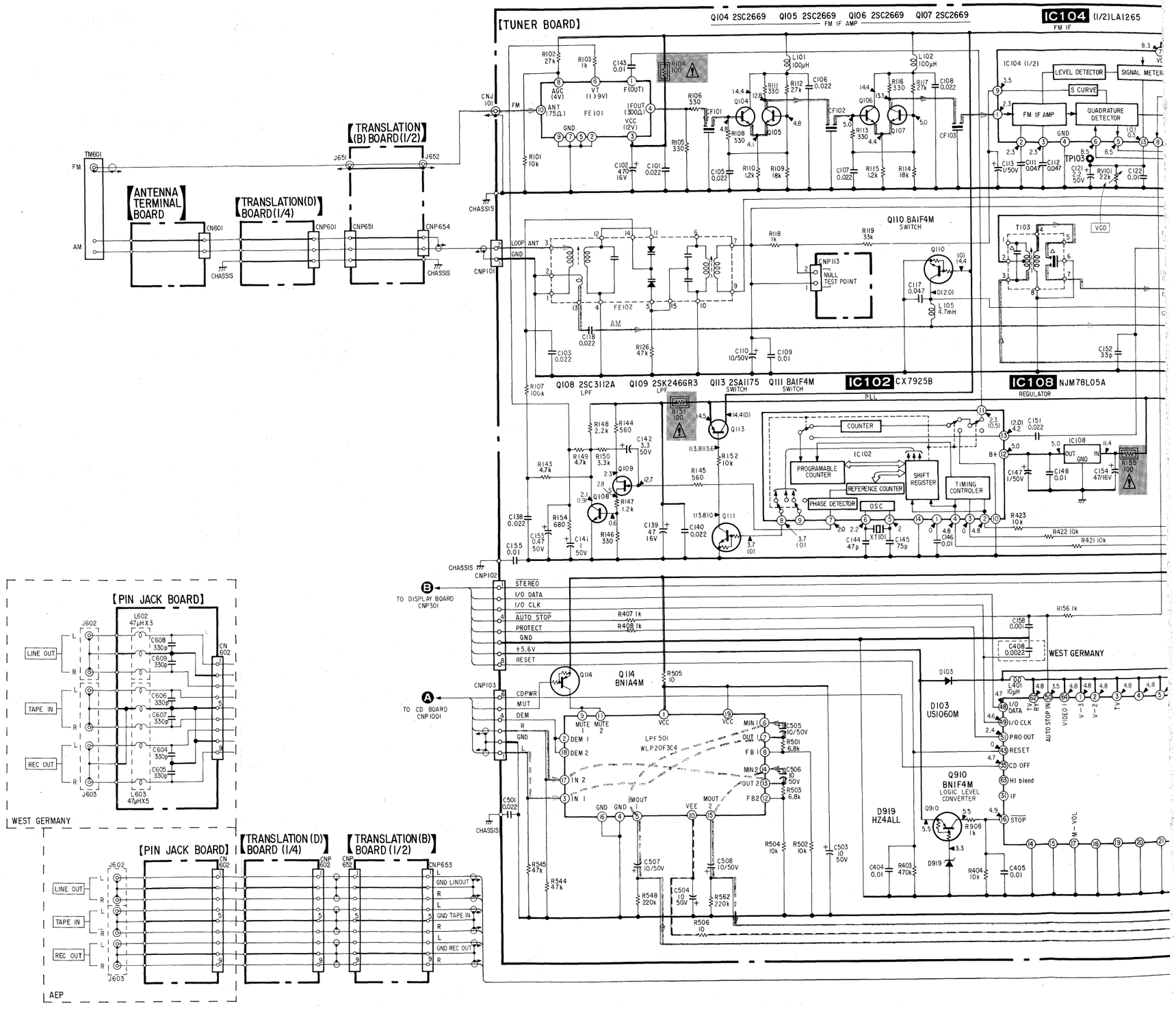
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PB mode
  ( ) : STOP mode
  < > : SURROUND mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▬▶ : CD
  ▬·▶ : R-CH
  ▬··▶ : L-CH
- Switch

Ref. No.	Switch	Position
SW252	LIMIT	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

6-8. SCHEMATIC DIAGRAM —TUNER SECTION—



Note:

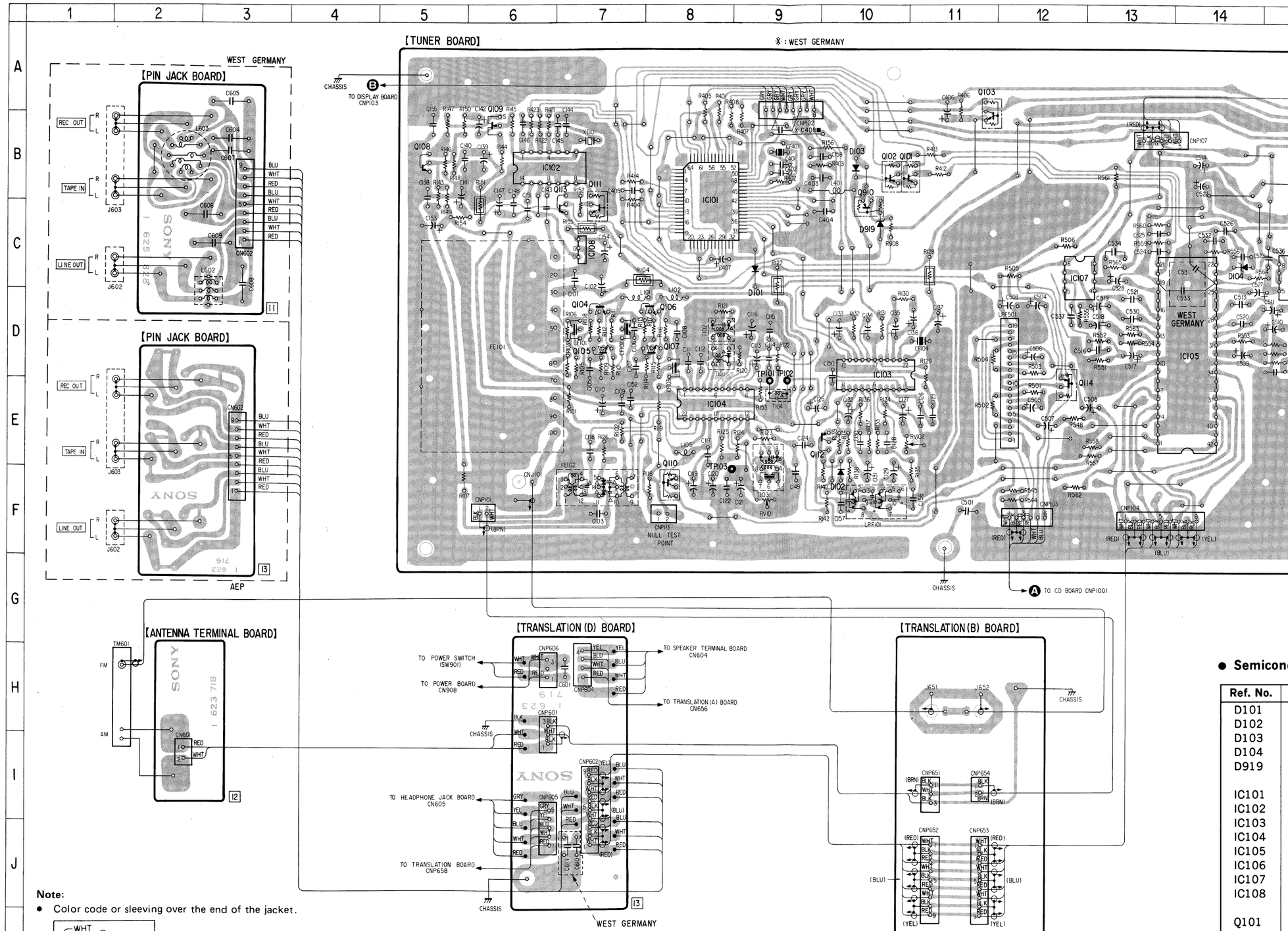
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ——— : B+ bus.
- ▬▬ : B− bus.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM mode
  ( ) : AM mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⟿ : FM or AM
  ⟿ : R-CH
  ⟿ : L-CH

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
A B C D E F G H I J
2SC2669
IC104 (1/2)LA1265
FM IF
IC104 (1/2)
LEVEL DETECTOR
SIGNAL METER
STOP SIGNAL ADJUSTMENT
LED DRIVE
S CURVE
FM IF AMP
QUADRATURE DETECTOR
POSTAMP
VCC
GND
TP103
RV101 22k
R127 330
R128 120
TP101
TP102
T104
T101
T102
FM
R153 2.2k
C125 10 50V
C114 470p
C150 220p
C124 0.033
R120 22k
IC103
LA3401
FM MPX
MUTING
DECODER
CONSTANT VOLTAGE
FF
FF 38kHz
FF 19kHz ∠90°
FF 19kHz ∠0°
REACTANCE CIRCUIT
OSC
PHASE COMPARATOR
PILOT DETECTOR
VCO STOP
STEREO SWITCH
TRIGGER
LAMP DRIVE
MUTING ON/OFF FM/AM SWITCH
VCC ON MUTING
MUTING OUTPUT
C128 390p
R133 120k
C130 390p
R134 150k
R135 3.3k
R137 120k
C131 10 50V
C156 0.001
C129 10 50V
LPF101
R136 150k
R138 3.3k
C157 0.001
IC104 (1/2)
LA1265
AM IF
VCO
T103
BUFFER
AGC
REG
OSC
AM IF AMP
DETECTOR
AM HIGH FREQUENCY AMP
FREQUENCY MIX
AM
R123 3.3k
C137 4.7 16V
C149 0.0068
C152 33p
C119 4.7/50V
C120 3.3 50V
R125 10k
R124 10k
CF104
C126 330p
FM STEREO SEPARATION
RV102 220k
C123 0.047
C127 10/50V
C135 0.47 50V
R129 4.7k
R130 1k
C136 1/50V
C134 1/50V
R131 1k
D101 ISS132
Q112 2SA1175 SWITCH
R133 4.7k
R132 100k
R139 47k
R140 10k
R141 10k
C132 1 50V
D102 ISS132
IC108 NJM78L05A
REGULATOR
C151 0.022
C147 1/50V
C148 0.01
C154 47/16V
R155 100
TIMING CONTROLER
R423 10k
R422 10k
R421 10k
Q103 BA1A3Q
RELAY DRIVE
IC106 (1/2) μPC4570C
AF AMP
D104 HZS6C3L
IC105
CX789
ASP
C502 22p
C515 22p
R547 1k
C509 1 50V
C510 47/6.3V
R549 4.7k
R550 220k
C514 10 16V
C523 0.022
C532 0.022
R556 1k
C533 0.022
C531 0.022
WEST GERMANY
C538 1/50V
C535 0.022
AEP
CHASSIS
TU+15V
ASP+15V
TU GND
ASP GND
TU-15V
ASP-15V
POWER RELAY
CNP106
TO AUDIO BOARD CN901
TUNER L
TUNER R
CD R
CD L
R557 5.6k
R558 5.6k
FUNCTION
TAPE COPY
TAPE MONITOR
MODE STEREO/ MONO
VOLUME (10dB)
VOLUME (1dB)
FILTER
BASS/TREBLE
SW MOS CONTROL LOGIC
VDD
DATA
CLOCK
STROBE
R553 12k
C520 0.1
C511 1/50V
C513 0.01
R554 4.7k
R563 12k
C530 0.1
C519 1/50V
C521 0.01
C517 1 50V
C518 47 6.3V
R555 220k
R559 4.7k
R560 4.7k
R561 4.7k
C524 0.001
C525 0.001
C526 0.001
R551 1M
R552 1k
C537 22p
C516 22p
C522 10 16V
IC107 (1/2) μPC4570C
AF AMP
IC106 (1/2) μPC4570C
AF AMP
C527 50V
C536 22p
R564 100k
R565 100k
C528 50V
C534 22p
ROUT
LOUT
GND
PRO IN
SP RY
CNP107
TO AUDIO BOARD CNP701
IC101
HD6I4022FG60
PLL ASP U-CON
WEST GERMANY
R156 1k
C158 0.001
C408 0.0022
L401 10μH
I/O DATA
I/O CLK
PRO OUT
RESET
CD OFF
HI blend
IF
STOP
M-VOL
L-DUB
L-COPY
AUTO STOP IN
TV RY
VIDEO 1
V-3
V-2
TV
SURROUND 1
SURROUND 2
SURROUND 3
SURROUND CS
VDD
MODE
TEST
AUTO STOP
VIDEO 3
MM/MC RY
ASP-LAT
MODE FM
TUN MUT
PRO IN
SP RY
P RY
DATA
PST
CLK
NC
ANT A
ANT B
-15V
R414 15k
R401 22k
R405 1k
R413 15k
R412 15k
Q102
Q101
Q101,102 BN1F4M
LOGIC LEVEL CONVERTER
Q910 BN1F4M
LOGIC LEVEL CONVERTER
R908 1k
R404 10k
C405 0.01
CF401
R402 1M
C402 100p
C401 100p
C403 0.001
C407 3.3 50V
R406 10k
C406 10 16V
CNP104
GND LINE
GND TAPE IN
GND REC OUT
IC107 (1/2) μPC4570C
AF AMP

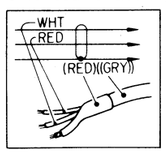
6-9. PRINTED WIRING BOARDS —TUNER SECTION—

● Refer to page 25 for Semiconductor Lead Layouts.



Note:

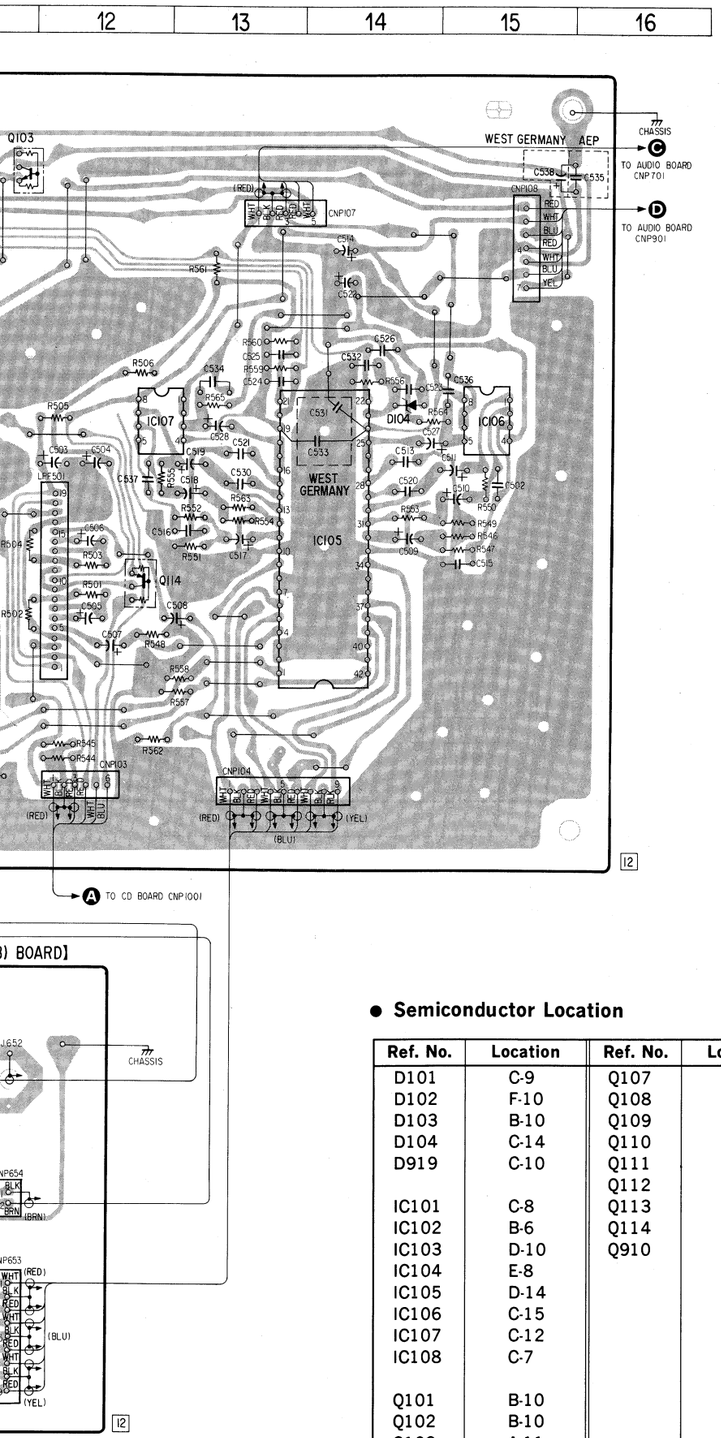
- Color code or sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.

● Semiconductor L

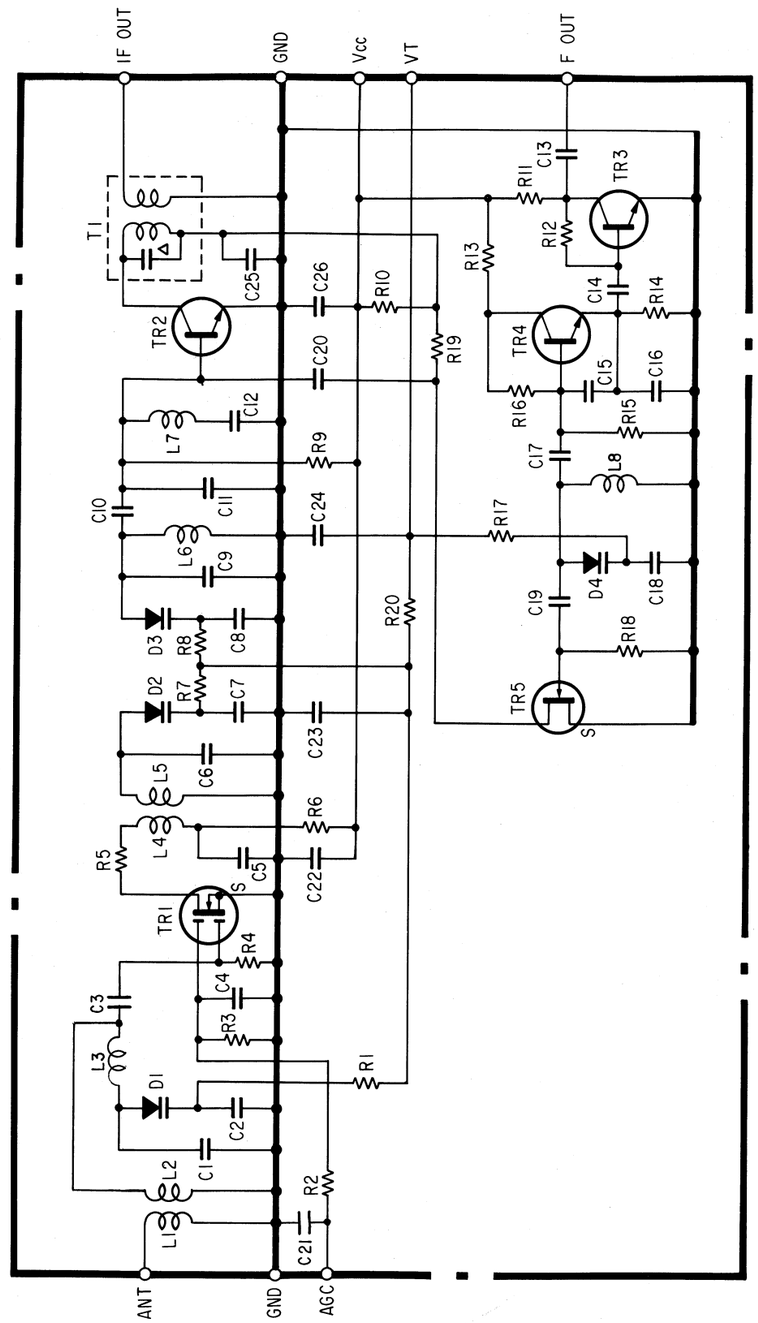
Ref. No.	Locatior
D101	C-9
D102	F-10
D103	B-10
D104	C-14
D919	C-10
IC101	C-8
IC102	B-6
IC103	D-10
IC104	E-8
IC105	D-14
IC106	C-15
IC107	C-12
IC108	C-7
Q101	B-10
Q102	B-10
Q103	A-11
Q104	D-7
Q105	D-7
Q106	D-8



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	C-9	Q107	D-8
D102	F-10	Q108	B-5
D103	B-10	Q109	B-6
D104	C-14	Q110	F-8
D919	C-10	Q111	C-7
		Q112	E-10
IC101	C-8	Q113	C-7
IC102	B-6	Q114	E-12
IC103	D-10	Q910	C-10
IC104	E-8		
IC105	D-14		
IC106	C-15		
IC107	C-12		
IC108	C-7		
Q101	B-10		
Q102	B-10		
Q103	A-11		
Q104	D-7		
Q105	D-7		
Q106	D-8		

● FE101 (FRONT END)



6-10. PRINTED WIRING BOARD —AUDIO/POWER SECTION—

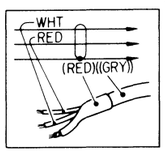
- **Refer to page 25 for Semiconductor Lead Layouts**

- **Semiconductor Location**

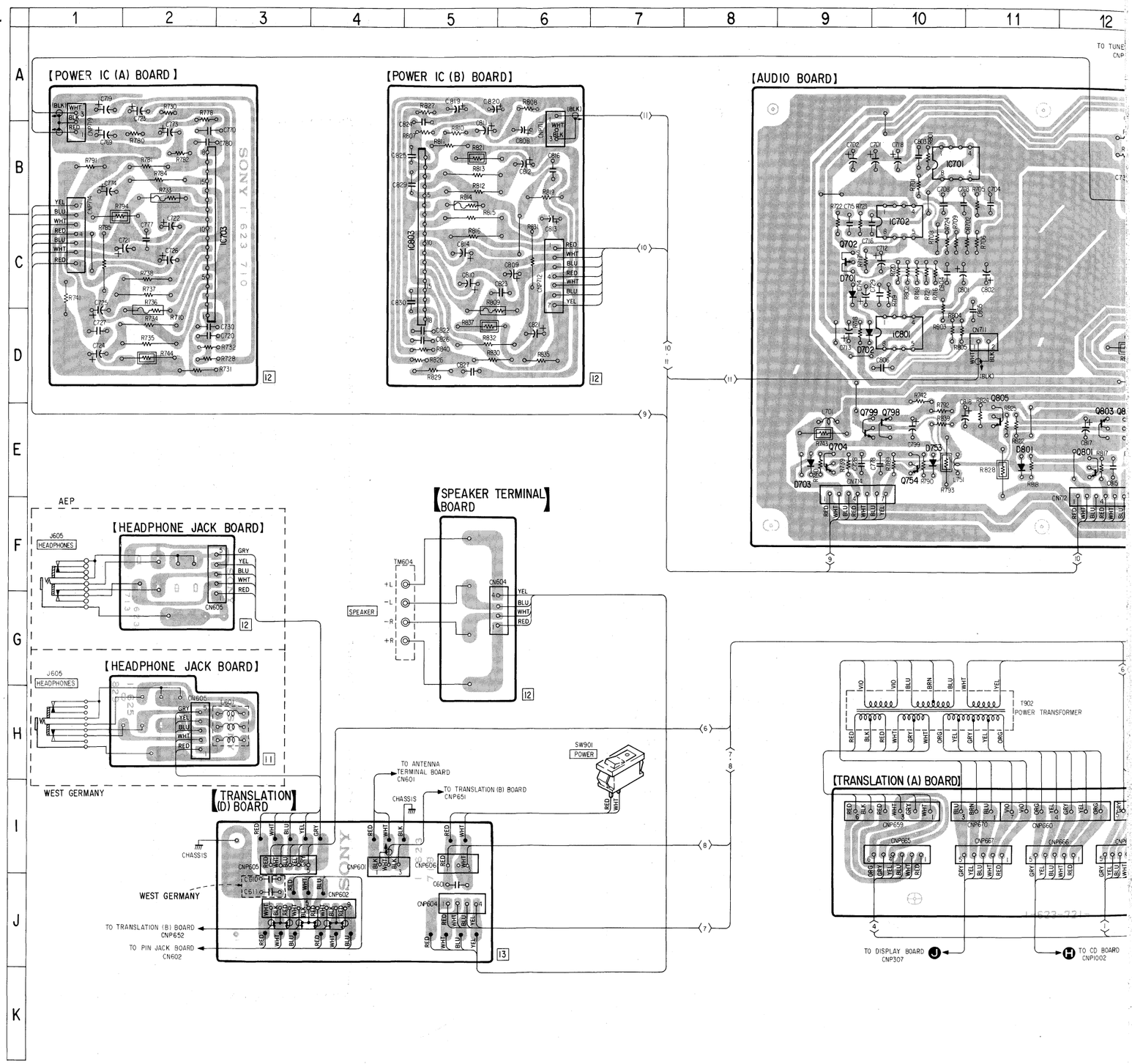
Ref. No.	Location
D701	C-9
D702	D-9
D703	E-9
D704	C-14
D705	C-14
D753	E-10
D801	E-11
D802	E-13
D901	I-22
D902	I-22
D906	H-22
D912	F-17
D918	C-16
D920	F-16
D951	I-21
D952	E-16
D953	C-17
D954	B-17
IC701	B-10
IC702	C-10
IC703	C-2
IC801	D-10
IC803	C-5
IC901	C-16
IC902	C-15
Q702	C-9
Q704	E-9
Q705	B-14
Q706	C-14
Q754	E-10
Q798	E-10
Q799	E-9
Q801	E-12
Q802	E-13
Q803	E-12
Q804	E-12
Q805	E-11
Q903	F-17
Q911	F-16
Q913	F-15
Q915	F-16

Note:

- Color code or sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.



10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

TO TUNER BOARD CNPI07 C
TO DISPLAY BOARD CNP302 I
TO TUNER BOARD CNPI08 D

SONY
1-823-726-

14

WEST GERMANY
【FILTER BOARD】
R601
CNP609
C602
L614
CNP608
L903
CNP607
L613
L616
CNP610
C603
R602
L615
11

AEP

【TRANSLATION (C) BOARD】
CNP603
TW610
TW609
AC IN 220V 50Hz
11

T902 POWER TRANSFORMER
AEP
SP901 WOOFER
【TION (A) BOARD】
CNP659 CNP670 CNP660 CNP658 CNP655 CNP656 CNP657
CNP665 CNP667 CNP666 CNP664 CNP668 CNP662 CNP663
12

WEST GERMANY
CB901
L902
CNP910

【POWER BOARD】
BP904
RY901
C914
VZR901
T901
D906
AEP
CB901
D951
D902
CNP907
GRY
YEL
BLU
WHT
RED
C902
C901
D901
CNP908
CNP910
12

TO DISPLAY BOARD CNP307 J
TO CD BOARD CNPI002 H
CHASSIS

6-11. SCHEMATIC DIAGRAM —AUDIO/POWER SECTION

【AUDIO BOARD】

【POWER IC(A) BOARD】 IC703 (1/2) STK4191V POWER AMP

【POWER IC(B) BOARD】 IC803 (1/2) STK4191V POWER AMP

【TRANSLATION (A) BOARD(1/2)】

【POWER BOARD】

【FILTER BOARD(1/2)】

【TRANSLATION (C) BOARD】

【TRANSLATION (D) BOARD (1/4)】

WEST GERMANY

AEP

IC701 (1/2) μPC4570C FILTER AMP

IC702 (1/2) μPC4570C FILTER AMP

IC801 (1/2) μPC4570C L.P.F

IC901 M5F7815 15V REG

IC902 MC7915CT -15V REG

Q913 2SA1175 RELAY DRIVE

Q911 BN1F4M SWITCH

Q915 2SC2785 CONSTANT VOLTAGE

Q903 2SD1585 CONSTANT VOLTAGE

D912 HZS6C3L

D920 HZ4ALL

D954 CTU-22S

D953 CTU-22R

D952 SIVB10S

D951 SIVB10

D906 ISSI32

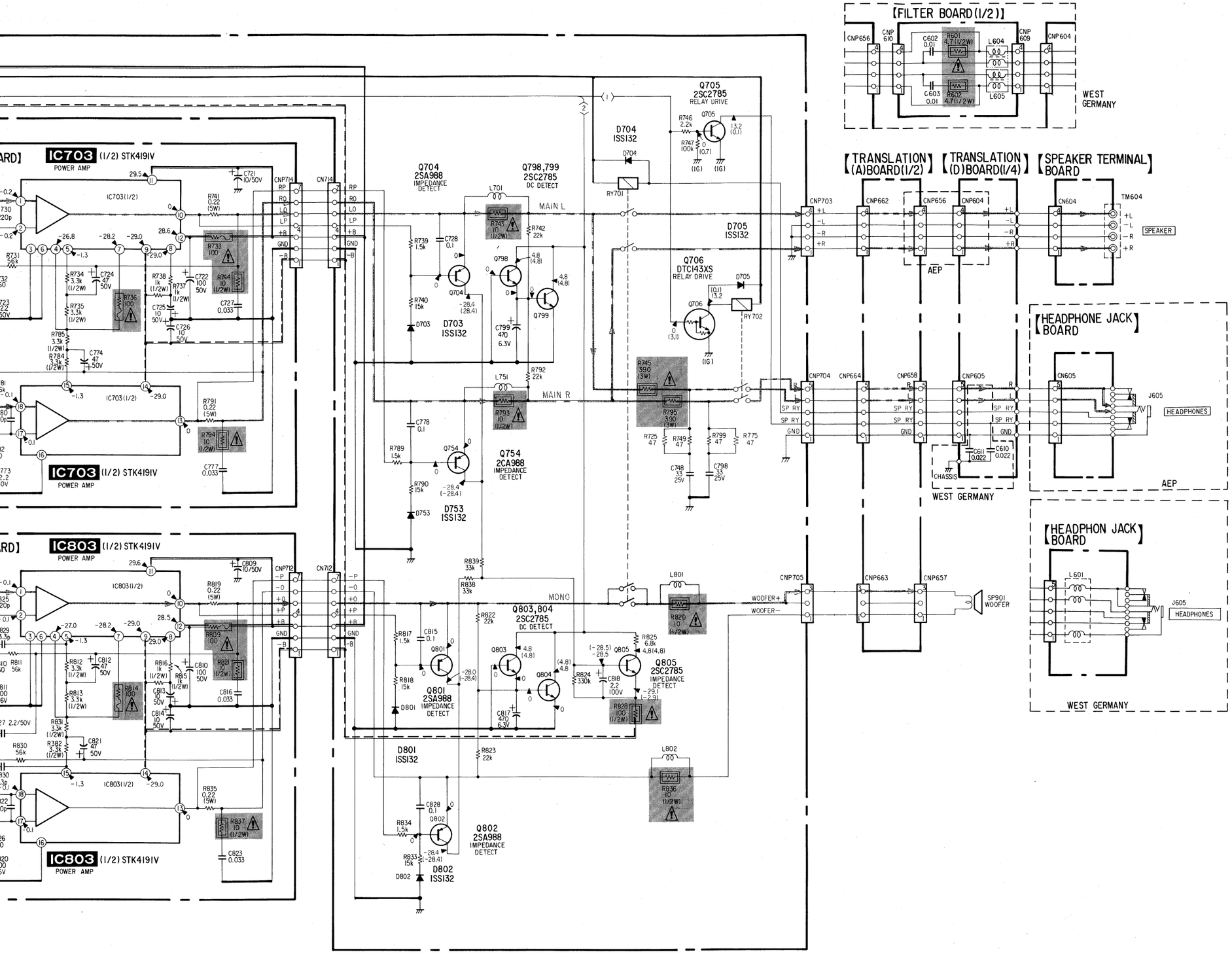
D902,901 ISSI32

Q702 2SK246Y

D701,702 ISSI31

T902 POWER TRANSFORMER

VZR901 SNR-14A300K



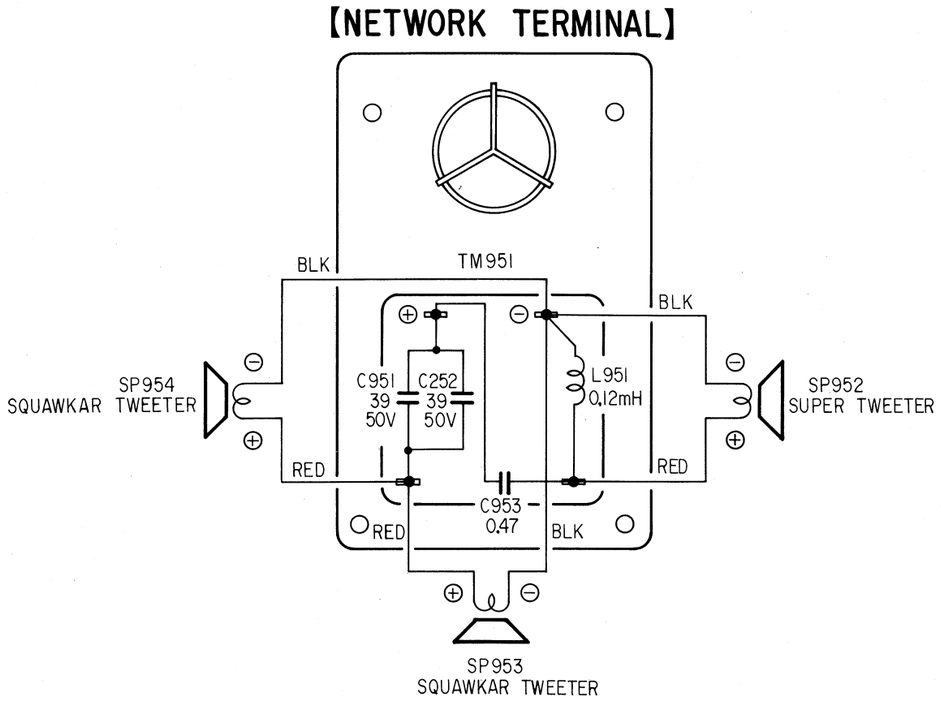
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▬ : B+ bus.
- ▬ : B− bus.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: STOP mode
  ( ): CD PLAY mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▭ : R-CH
  ▭ : L-CH
  ▭ : MONO
- Switch

Ref. No.	Switch	Position
SW901	POWER	ON

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

6-12. WIRING DIAGRAM —SPEAKER SECTION—



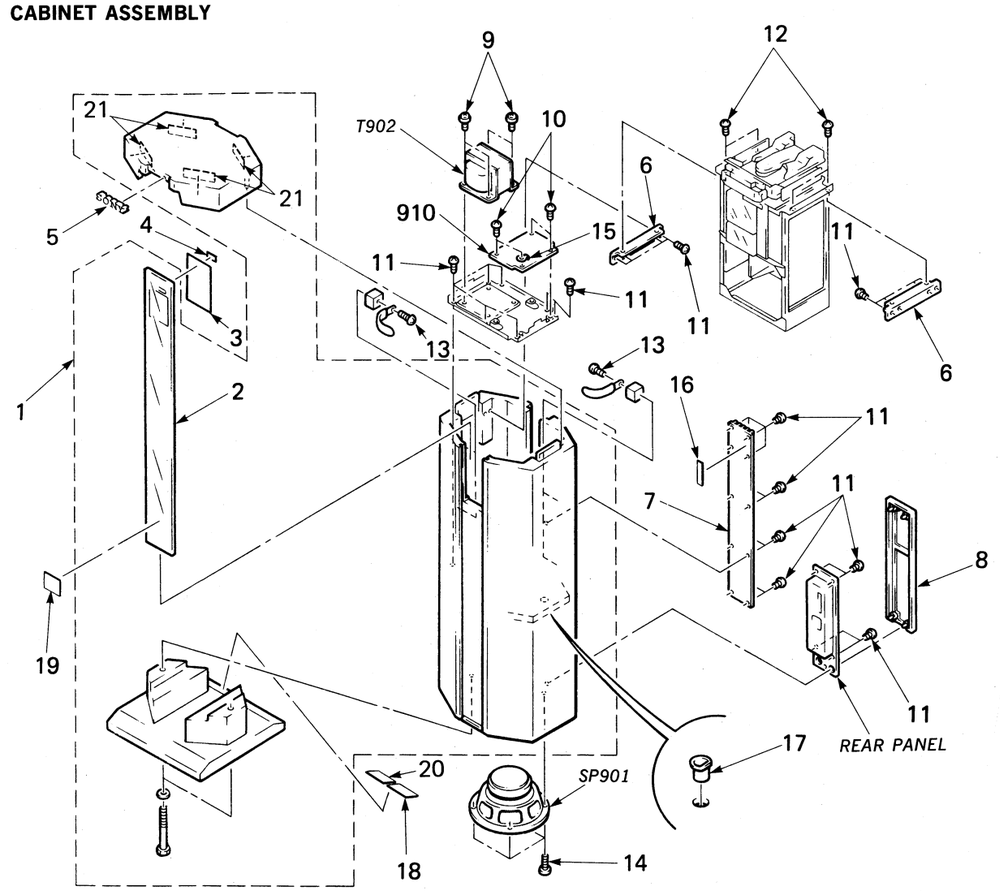
SECTION 7
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color

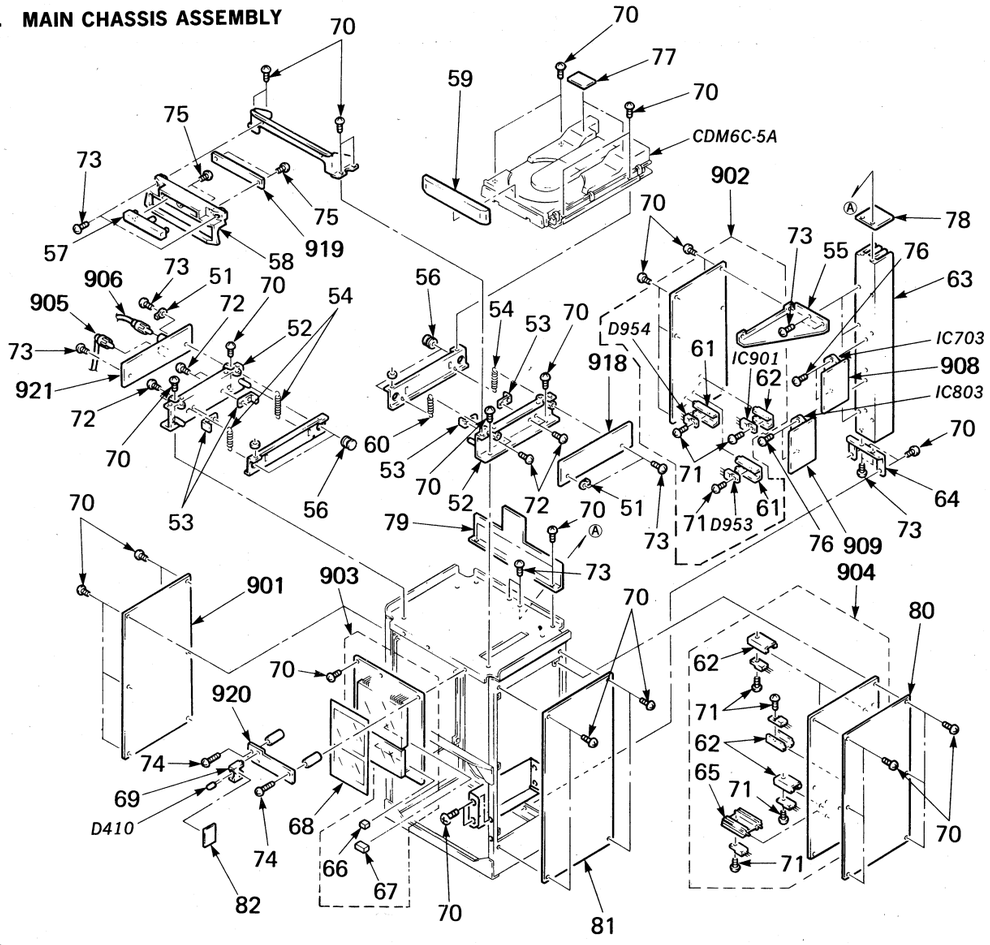
The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

7-1. CABINET ASSEMBLY



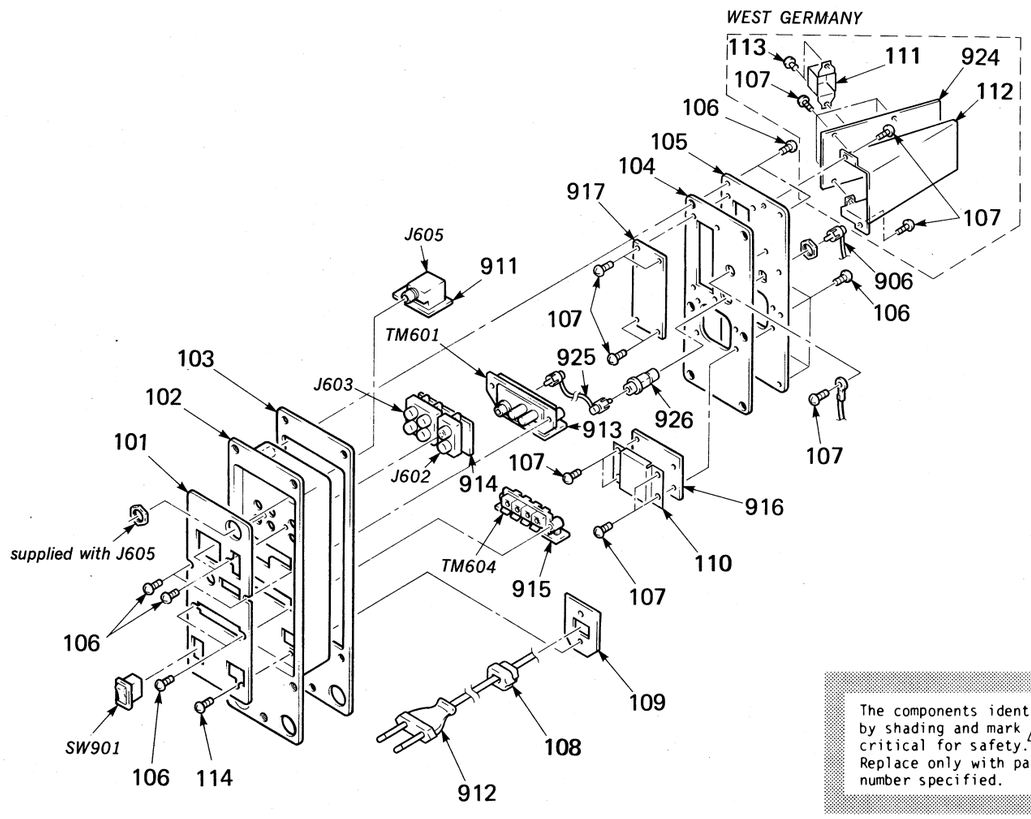
No.	Part No.	Description	Remarks
1	*X-4922-304-2	CABINET ASSY, CENTER	2,21
2	*4-922-315-01	GLASS, ORNAMENT	
3	4-922-321-01	FILTER (A)	
4	4-922-344-01	FILTER (C)	
5	3-548-973-31	EMBLEM, SONY	
6	*4-922-327-01	BRACKET (C)	
7	*4-922-332-01	PANEL (B), BACK	
8	X-4922-303-1	FRAME ASSY (A), GRILLE	
9	7-682-661-09	SCREW +PSW 4X8	
10	7-682-147-01	SCREW +BVTT 3X6 (S)	
11	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
12	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
13	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
14	7-682-165-09	SCREW +P 4X16	
15	4-870-539-00	PLATE, GROUND	
16	*4-922-363-01	COVER (PANEL)	
17	*4-922-362-01	COVER (CORD)	
18	*4-922-368-01	LABEL, MODEL NUMBER (AE)	
19	3-703-704-41	STICKER, SONY SYMBOL (40)	
20	*4-885-838-00	LABEL, CLASS 1	
21	*4-922-422-01	CUSHION (C)	
910	*1-623-712-11	PC BOARD, POWER	
SP901	1-503-852-11	SPEAKER (20CM)(WOOFER)	
T902	⚠1-448-964-11	TRANSFORMER, POWER	

7-2. MAIN CHASSIS ASSEMBLY



No.	Part No.	Description	Remarks
51	4-870-539-00	PLATE, GROUND	
52	*X-4922-305-1	BRACKET (MD2) ASSY	
53	*4-922-346-01	BRACKET (MD3)	
54	4-922-343-01	SPRING (A), TENSION	
55	*4-922-347-01	BRACKET (AU.PCB)	
56	*4-914-234-01	DAMPER (2), HYPER	
57	4-922-330-01	BUTTON (O/C)	
58	*4-922-337-01	HOLDER (SW)	
59	4-922-329-01	PANEL, LOADING	
60	4-922-345-01	SPRING (B), TENSION	
61	*4-886-555-00	HEAT SINK	
62	*4-902-345-01	HEAT SINK	
63	*4-922-333-01	HEAT SINK	
64	*4-922-326-01	BRACKET (H)	
65	*4-908-502-01	HEAT SINK	
66	*9-911-847-XX	CUSHION, RUBBER	
67	*4-604-357-01	CUSHION (H18), RUBBER	
68	4-922-349-01	FILTER (B)	
69	4-908-554-01	HOLDER, LED	
70	7-682-147-01	SCREW +BVTT 3X6 (S)	
71	7-682-147-15	SCREW, TR	
72	7-682-646-09	SCREW +PS 3X5	
73	7-682-647-09	SCREW +PS 3X6	
74	7-682-153-01	SCREW +BVTT 3X20 (S)	
75	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
76	7-682-550-09	SCREW +B 3X12	
77	*4-913-955-01	DUMPER (D)	
78	*4-922-358-01	COVER (H)	
79	*4-922-367-01	COVER (M)	
80	*4-922-365-01	COVER (P)	
81	*4-922-366-01	PLATE, SHIELD	
82	*4-922-359-01	SHEET (L)	
901	*A-4351-623-A	(AEP).....MOUNTED PCB, TUNER	
	*A-4351-624-A	(WEST GERMANY)...MOUNTED PCB, TUNER	
902	*A-4394-439-A	MOUNTED PCB, AUDIO	61,62,71
903	A-4472-255-A	MOUNTED PCB, DISPLAY	66,67
904	*A-4651-145-A	MOUNTED PCB, CD	62,65,71
905	*1-555-110-00	CABLE, P-P	
906	1-559-489-11	CABLE, PIN	
908	*1-623-710-11	PC BOARD, POWER IC (A)	
909	*1-623-711-11	PC BOARD, POWER IC (B)	
918	*1-623-721-11	PC BOARD, TRANSLATION (A)	
919	*1-623-723-11	PC BOARD, SWITCH	
920	*1-623-724-11	PC BOARD, LED	
921	*1-623-727-11	PC BOARD, TRANSLATION (B)	

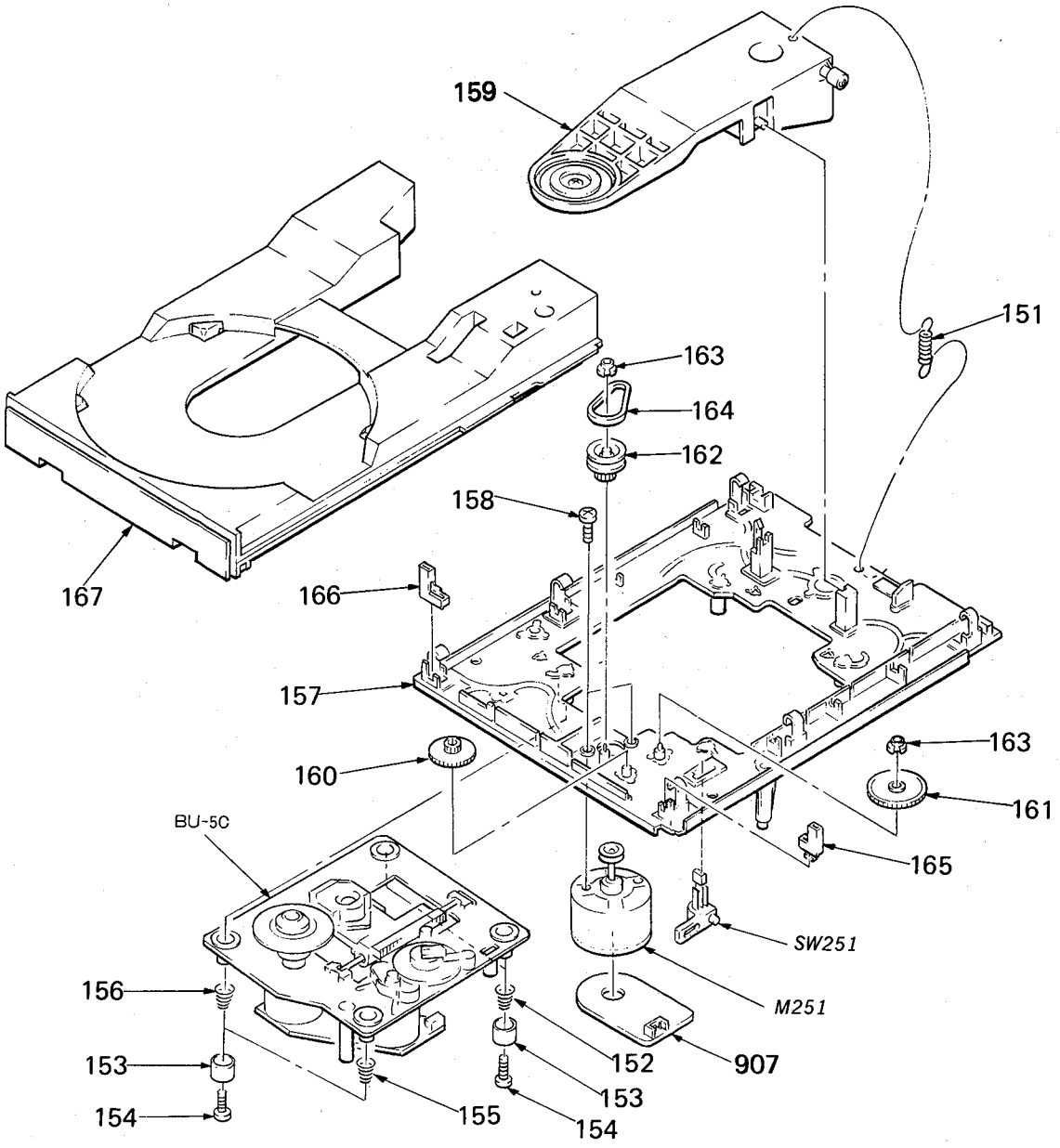
7-3. REAR PANEL ASSEMBLY



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
101	4-922-335-11	PLATE, INDICATION	
102	*4-922-341-01	PANEL (A), BACK	
103	*4-922-336-01	SPACER (A)	
104	*4-922-322-01	SPACER (B)	
105	*4-922-328-01	(AEP).....COVER (A)	
	*4-922-328-11	(WEST GERMANY)...COVER (A)	
106	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
107	7-682-147-01	SCREW +BVTT 3X6 (S)	
108	⚠*3-703-244-00	BUSHING (2104), CORD	
109	*4-922-360-01	BRACKET (CORD)	
110	*4-922-361-01	COVER (POWER)	
111	*4-922-369-01	(WEST GERMANY)...COVER (FILTER)	
112	*4-922-370-01	(WEST GERMANY)...BRACKET	
113	3-531-576-11	(WEST GERMANY)...RIVET	
114	7-682-547-09	SCREW +BVTT 3X6 (S)	
906	1-559-489-11	CABLE, PIN	
911	*1-623-713-11	(AEP).....PC BOARD, HEADPHONE JACK	
	*1-625-829-11	(WEST GERMANY)...PC BOARD, HEADPHONE JACK	
912	⚠1-555-750-00	CORD, POWER	
913	*1-623-715-11	PC BOARD, ANTENNA TERMINAL	
914	*1-623-716-11	(AEP).....PC BOARD, PIN JACK	
	*1-625-828-11	(WEST GERMANY)...PC BOARD, PIN JACK	
915	*1-623-717-11	PC BOARD, SPEAKER TERMINAL	
916	*1-623-720-11	PC BOARD, TRANSLATION (C)	
917	*1-623-719-11	PC BOARD, TRANSLATION (D)	
924	*1-625-121-11	(WEST GERMANY)...PC BOARD, FILTER	
925	*1-555-110-00	P-P CABLE	
926	1-565-054-11	JACK, PIN (TRANSLATION)	
SW901	⚠1-553-575-21	SWITCH, SEESAW (POWER)	

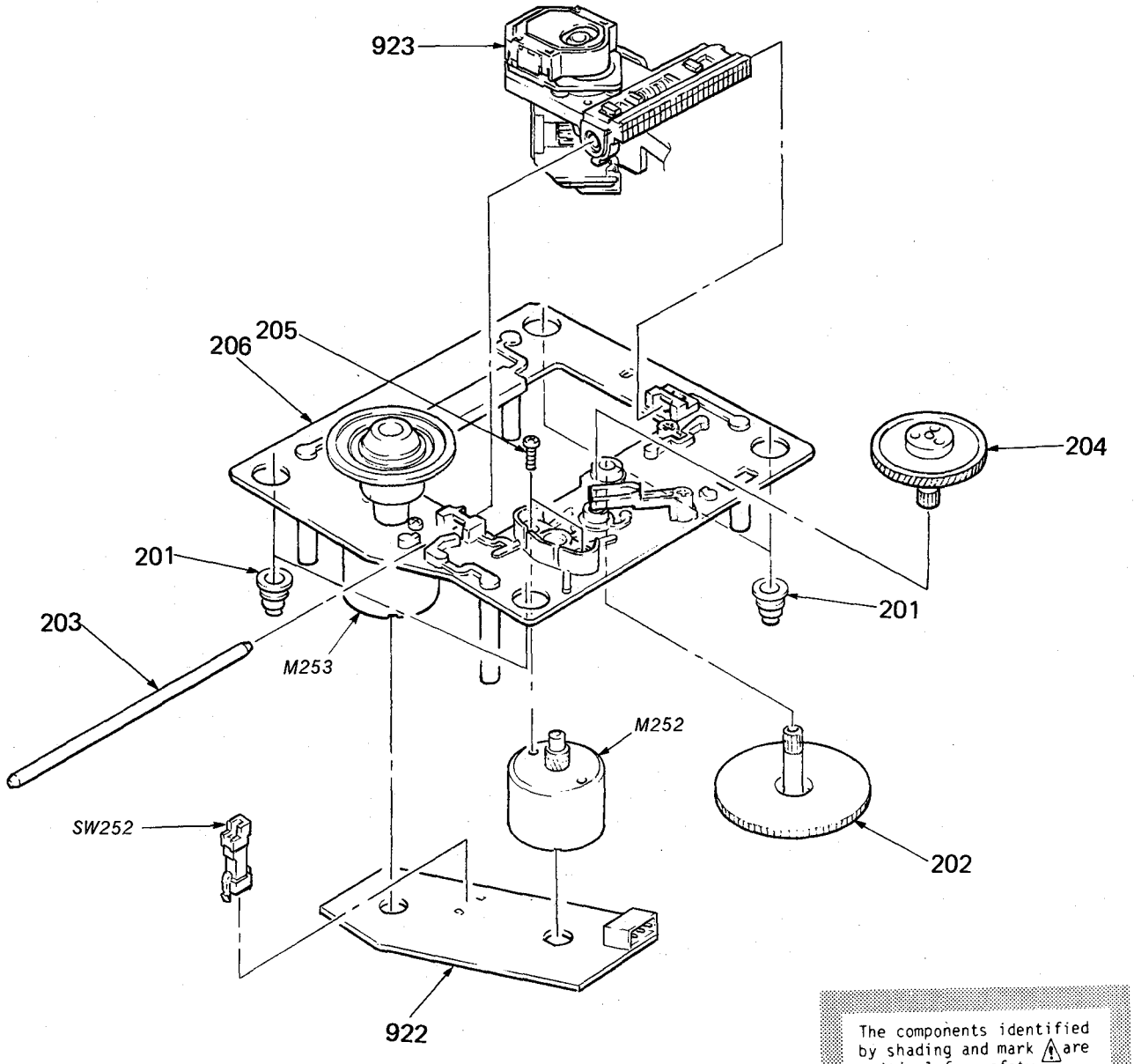
7-4. LOADING ASSEMBLY (CDM6C-5A)



No.	Part No.	Description	Remarks
151	4-917-551-01	SPRING (ARM), TENSION	
152	4-917-507-01	SPRING (H)	
153	4-917-508-01	HOLDER, SP	
154	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S	
155	4-917-541-01	SPRING (B)	
156	4-918-669-01	SPRING (W)	
157	4-917-561-11	CHASSIS (OUTSERT), LOADING	
158	7-621-775-40	SCREW +B 2.6X8	
159	A-4681-011-B	ARM ASSY, CHUCKING	
160	4-910-402-01	GEAR (2), LOADING	

No.	Part No.	Description	Remarks
161	4-917-550-01	GEAR (A), LOADING	
162	4-917-546-01	PULLEY (A), LOADING	
163	4-910-418-01	BUSHING (DIA. 4)	
164	4-917-548-01	BELT, DRIVING	
165	*4-918-613-01	CUSHION (RIGHT)	
166	*4-918-612-01	CUSHION (LEFT)	
167	A-4665-013-A	TABLE ASSY, DISK	
907	*1-620-098-11	PC BOARD, LOADING MOTOR	
M251	A-4608-320-A	MOTOR ASSY, L	
SW251	1-570-203-11	SWITCH, LEAF (LOADING)	

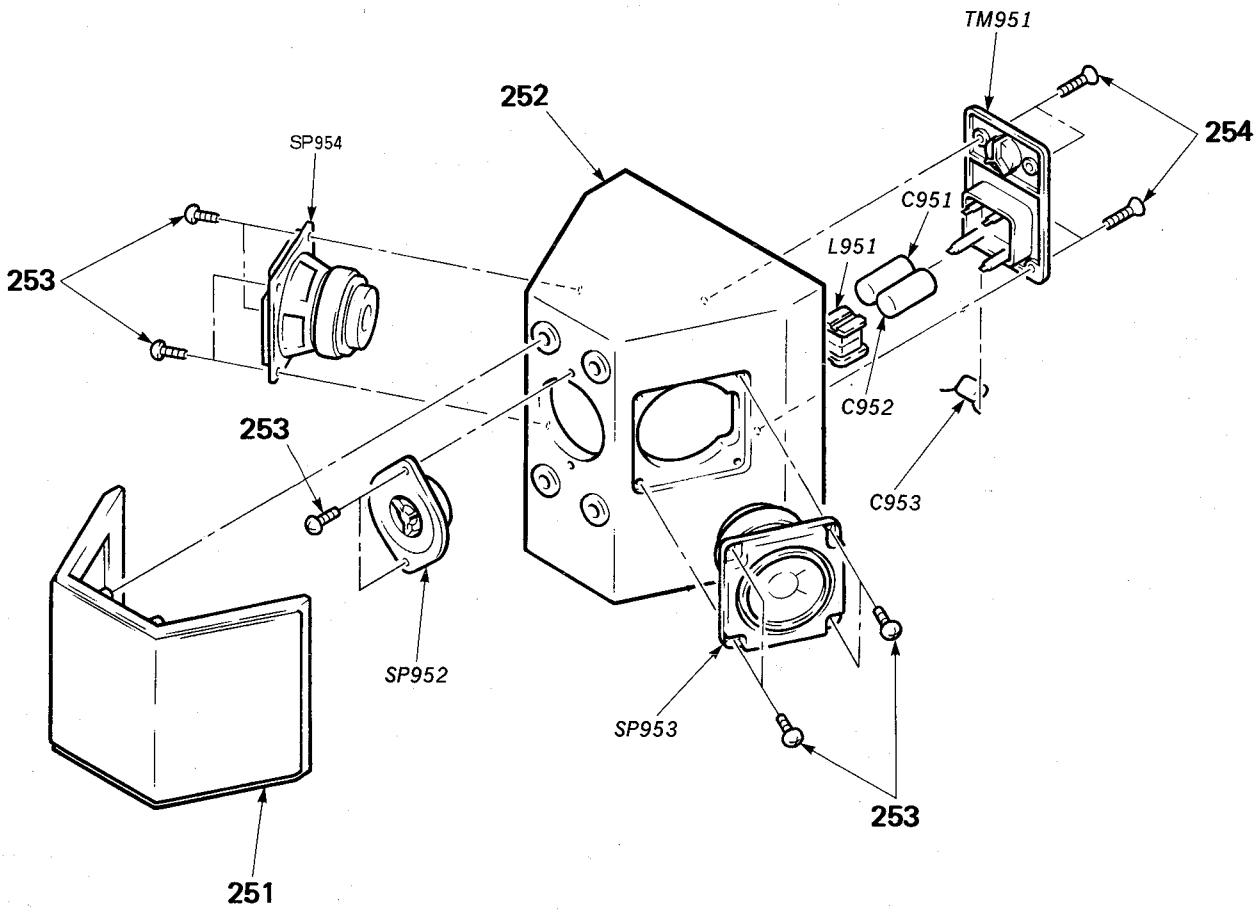
7-5. OPTICS PICKUP ASSEMBLY



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
201	4-917-562-01	INSULATOR	
202	4-917-564-01	GEAR (P), FLATNESS	
203	4-917-565-01	SHAFT, SLED	
204	4-917-567-01	GEAR (M)	
205	7-621-255-15	SCREW +P 2X3	
206	X-4917-523-1	BASE ASSY (SPINDLE MOTOR,M253)	
922	*1-624-322-11	PC BOARD, SL/SP MOTOR	
923	⚠8-848-062-01	PICKUP, OPTICS KSS-150A	
M252	X-4917-504-1	MOTOR ASSY (SLED)	
SW252	1-571-274-11	SWITCH, LEAF (LIMIT)	

7-6. SPEAKER ASSEMBLY



No.	Part No.	Description	Remarks
251	X-4922-301-1	FRAME ASSY (B), GRILLE	
252	*X-4922-302-2	CABINET ASSY, SPEAKER	
253	4-874-614-11	SCREW (4) (3.5X14), TAPPING	
254	7-682-251-09	SCREW +K 3X14	
C951	1-124-606-11	CAP, ELECT (NONPOLAR) 39MF	
C952	1-124-606-11	CAP, ELECT (NONPOLAR) 39MF	
C953	1-130-574-00	CAP, POLYESTER FILM 0.47MF	
L951	*1-459-494-00	COIL, NETWORK (0.12MMH)	
SP952	1-503-850-11	SPEAKER (2.5CM)(SUPER TWEETER)	
SP953	1-503-851-11	SPEAKER (5.7CM)(SQUAWKAR TWEETER)	
SP954	1-503-851-11	SPEAKER (5.7CM)(SQUAWKAR TWEETER)	
TM951	1-537-098-11	TERMINAL BOARD (SPEAKER)	

SECTION 8
ELECTRICAL PARTSLIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-4351-623-A	(AEP).....MOUNTED PCB, TUNER
	*A-4351-624-A	(WEST GERMANY)...MOUNTED PCB, TUNER
902	*A-4394-439-A	MOUNTED PCB, AUDIO
903	A-4472-255-A	MOUNTED PCB, DISPLAY
904	*A-4651-145-A	MOUNTED PCB, CD
905	*1-555-110-00	CABLE, P-P
906	1-559-489-11	CABLE, PIN
907	*1-620-098-11	PC BOARD, LOADING MOTOR
908	*1-623-710-11	PC BOARD, POWER IC (A)
909	*1-623-711-11	PC BOARD, POWER IC (B)
910	*1-623-712-11	PC BOARD, POWER
911	*1-623-713-11	(AEP).....PC BOARD, HEADPHONE JACK
	*1-625-829-11	(WEST GERMANY) ...PC BOARD, HEADPHONE JACK
912	⚠1-555-750-00	CORD, POWER
913	*1-623-715-11	PC BOARD, ANTENNA TERMINAL
914	*1-623-716-11	(AEP).....PC BOARD, PIN JACK
	*1-625-828-11	(WEST GERMANY)...PC BOARD, PIN JACK
915	*1-623-717-11	PC BOARD, SPEAKER TERMINAL
916	*1-623-720-11	PC BOARD, TRANSLATION (C)
917	*1-623-719-11	PC BOARD, TRANSLATION (D)
918	*1-623-721-11	PC BOARD, TRANSLATION (A)
919	*1-623-723-11	PC BOARD, SWITCH
920	*1-623-724-11	PC BOARD, LED
921	*1-623-727-11	PC BOARD, TRANSLATION (B)
922	*1-624-322-11	PC BOARD, SL/SP MOTOR
923	⚠8-848-062-01	PICKUP, OPTICS KSS-150A
924	*1-625-121-11	(WEST GERMANY)...PC BOARD, FILTER
925	*1-555-110-00	P-P CABLE
926	1-565-054-11	JACK, PIN (TRANSLATION)
BP904	*1-535-139-00	BASE POST 19MM (10MM PITCH) 2P
BTT301	1-528-120-00	BATTERY, LITHIUM (CR-2025)

Ref.No.	Part No.	Description			
C101	1-101-005-00	CERAMIC	0.022MF		50V
C102	1-126-103-11	ELECT	470MF	20%	16V
C103	1-101-005-00	CERAMIC	0.022MF		50V
C105	1-101-005-00	CERAMIC	0.022MF		50V
C106	1-101-005-00	CERAMIC	0.022MF		50V
C107	1-101-005-00	CERAMIC	0.022MF		50V
C108	1-101-005-00	CERAMIC	0.022MF		50V
C109	1-161-379-00	CERAMIC	0.01MF	30%	16V
C110	1-124-261-00	ELECT	10MF	20%	50V
C111	1-101-006-00	CERAMIC	0.047MF		50V
C112	1-101-006-00	CERAMIC	0.047MF		50V
C113	1-123-611-00	ELECT	1MF	20%	50V
C114	1-162-290-31	CERAMIC	470PF	10%	50V
C115	1-161-379-00	CERAMIC	0.01MF	30%	16V
C116	1-124-236-00	ELECT	47MF	20%	16V
C117	1-101-006-00	CERAMIC	0.047MF		50V
C118	1-101-005-00	CERAMIC	0.022MF		50V
C119	1-124-259-00	ELECT	4.7MF	20%	50V
C120	1-124-258-00	ELECT	3.3MF	20%	50V
C121	1-124-257-00	ELECT	2.2MF	20%	50V
C122	1-161-379-00	CERAMIC	0.01MF	30%	16V
C123	1-130-491-00	MYLAR	0.047MF	5%	50V
C124	1-130-489-00	MYLAR	0.033MF	5%	50V
C125	1-124-261-00	ELECT	10MF	20%	50V
C126	1-162-288-31	CERAMIC	330PF	10%	50V
C127	1-124-261-00	ELECT	10MF	20%	50V
C128	1-162-289-31	CERAMIC	390PF	10%	50V
C129	1-124-261-00	ELECT	10MF	20%	50V
C130	1-162-289-31	CERAMIC	390PF	10%	50V
C131	1-124-261-00	ELECT	10MF	20%	50V
C132	1-123-611-00	ELECT	1MF	20%	50V
C133	1-124-465-00	ELECT	0.47MF	20%	50V
C134	1-123-611-00	ELECT	1MF	20%	50V
C135	1-124-465-00	ELECT	0.47MF	20%	50V
C136	1-123-611-00	ELECT	1MF	20%	50V
C137	1-124-236-00	ELECT	47MF	20%	16V
C138	1-101-005-00	CERAMIC	0.022MF		50V
C139	1-124-236-00	ELECT	47MF	20%	16V
C140	1-101-005-00	CERAMIC	0.022MF		50V
C141	1-123-611-00	ELECT	1MF	20%	50V
C142	1-124-258-00	ELECT	3.3MF	20%	50V
C143	1-161-379-00	CERAMIC	0.01MF	30%	16V
C144	1-162-215-31	CERAMIC	47PF	5%	50V
C145	1-162-279-31	CERAMIC	75PF	10%	50V
C146	1-161-379-00	CERAMIC	0.01MF	30%	16V
C147	1-123-611-00	ELECT	1MF	20%	50V
C148	1-161-379-00	CERAMIC	0.01MF	30%	16V
C149	1-130-481-00	MYLAR	0.0068MF	5%	50V
C150	1-162-286-31	CERAMIC	220PF	10%	50V
C151	1-101-005-00	CERAMIC	0.022MF		50V
C152	1-162-211-31	CERAMIC	33PF	5%	50V
C153	1-124-465-00	ELECT	0.47MF	20%	50V
C154	1-124-236-00	ELECT	47MF	20%	16V
C155	1-161-379-00	CERAMIC	0.01MF	30%	16V
C156	1-162-294-31	CERAMIC	0.001MF	10%	50V
C157	1-162-294-31	CERAMIC	0.001MF	10%	50V
C158	1-162-294-31	CERAMIC	0.001MF	10%	50V

Ref.No.	Part No.	Description			
C251	1-101-005-00	CERAMIC	0.022MF		50V
C252	1-106-351-00	MYLAR	0.0022MF	5%	50V
C253	1-106-351-00	MYLAR	0.0022MF	5%	50V
C301	1-162-179-11	CERAMIC	0.1MF		50V
C302	1-124-261-00	ELECT	10MF	20%	50V
C303	1-124-261-00	ELECT	10MF	20%	50V
C304	1-161-494-00	CERAMIC	0.022MF		25V
C305	1-161-494-00	CERAMIC	0.022MF		25V
C306	1-161-494-00	CERAMIC	0.022MF		25V
C307	1-124-261-00	ELECT	10MF	20%	50V
C308	1-162-179-11	CERAMIC	0.1MF		50V
C309	1-162-179-11	CERAMIC	0.1MF		50V
C310	1-123-382-00	ELECT	3.3MF	20%	50V
C311	1-136-165-00	FILM	0.1MF	5%	50V
C312	1-124-261-00	ELECT	10MF	20%	50V
C313	1-124-261-00	ELECT	10MF	20%	50V
C314	1-161-494-00	CERAMIC	0.022MF		25V
C315	1-162-282-31	CERAMIC	100PF	10%	50V
C316	1-162-282-31	CERAMIC	100PF	10%	50V
C317	1-124-465-00	ELECT	0.47MF	20%	50V
C318	1-136-157-00	FILM	0.022MF	5%	50V
C319	1-124-499-11	ELECT	1MF	20%	50V
C401	1-162-282-31	CERAMIC	100PF	10%	50V
C402	1-162-282-31	CERAMIC	100PF	10%	50V
C403	1-102-074-91	CERAMIC	0.001MF	10%	50V
C404	1-161-379-00	CERAMIC	0.01MF	30%	16V
C405	1-161-379-00	CERAMIC	0.01MF	30%	16V
C406	1-124-462-00	ELECT	10MF	20%	16V
C407	1-124-258-00	ELECT	3.3MF	20%	50V
C501	1-101-005-00	CERAMIC	0.022MF		50V
C502	1-162-207-31	CERAMIC	22PF	5%	50V
C503	1-123-875-11	ELECT	10MF	20%	50V
C504	1-123-875-11	ELECT	10MF	20%	50V
C505	1-123-875-11	ELECT	10MF	20%	50V
C506	1-123-875-11	ELECT	10MF	20%	50V
C507	1-123-875-11	ELECT	10MF	20%	50V
C508	1-123-875-11	ELECT	10MF	20%	50V
C509	1-123-611-00	ELECT	1MF	20%	50V
C510	1-124-224-00	ELECT	47MF	20%	6.3V
C511	1-123-611-00	ELECT	1MF	20%	50V
C513	1-130-483-00	MYLAR	0.01MF	5%	50V
C514	1-124-462-00	ELECT	10MF	20%	16V
C515	1-162-207-31	CERAMIC	22PF	5%	50V
C516	1-162-207-31	CERAMIC	22PF	5%	50V
C517	1-123-611-00	ELECT	1MF	20%	50V
C518	1-124-224-00	ELECT	47MF	20%	6.3V
C519	1-123-611-00	ELECT	1MF	20%	50V
C520	1-130-495-00	MYLAR	0.1MF	5%	50V
C521	1-130-483-00	MYLAR	0.01MF	5%	50V
C522	1-124-462-00	ELECT	10MF	20%	16V
C523	1-101-005-00	CERAMIC	0.022MF		50V
C524	1-162-294-31	CERAMIC	0.001MF	10%	50V
C525	1-162-294-31	CERAMIC	0.001MF	10%	50V
C526	1-162-294-31	CERAMIC	0.001MF	10%	50V
C527	1-123-611-00	ELECT	1MF	20%	50V
C528	1-123-611-00	ELECT	1MF	20%	50V
C530	1-130-495-00	MYLAR	0.1MF	5%	50V

Ref.No.	Part No.	Description			
C531	1-101-005-00	(WEST GERMANY)..CERAMIC	0.022MF		50V
C532	1-101-005-00	CERAMIC	0.022MF		50V
C533	1-101-005-00	(WEST GERMANY)..CERAMIC	0.022MF		50V
C534	1-162-207-31	CERAMIC	22PF	5%	50V
C535	1-101-005-00	CERAMIC	0.022MF		50V
C536	1-162-207-31	CERAMIC	22PF	5%	50V
C537	1-162-207-31	CERAMIC	22PF	5%	50V
C601	1-101-001-00	(WEST GERMANY)..CERAMIC	0.001MF		50V
C602	1-136-153-00	(WEST GERMANY)..FILM	0.01MF	5%	50V
C603	1-136-153-00	(WEST GERMANY)..FILM	0.01MF	5%	50V
C604	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C605	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C606	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C607	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C608	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C609	1-162-288-31	(WEST GERMANY)..CERAMIC	330PF	10%	50V
C610	1-101-005-00	(WEST GERMANY)..CERAMIC	0.022MF		50V
C611	1-101-005-00	(WEST GERMANY)..CERAMIC	0.022MF		50V
C701	1-124-477-11	ELECT	47MF	20%	25V
C702	1-124-477-11	ELECT	47MF	20%	25V
C703	1-136-172-00	FILM	0.39MF	5%	50V
C704	1-136-165-00	FILM	0.1MF	5%	50V
C708	1-124-767-00	ELECT	2.2MF	20%	50V
C712	1-124-477-11	ELECT	47MF	20%	25V
C713	1-123-875-11	ELECT	10MF	20%	50V
C714	1-123-875-11	ELECT	10MF	20%	50V
C715	1-136-175-00	FILM	0.68MF	5%	50V
C716	1-136-163-00	FILM	0.068MF	5%	50V
C718	1-124-499-11	ELECT	1MF	20%	50V
C719	1-124-925-11	ELECT	2.2MF	20%	50V
C720	1-162-286-31	CERAMIC	220PF	10%	50V
C721	1-123-875-11	ELECT	10MF	20%	50V
C722	1-124-122-11	ELECT	100MF	20%	50V
C723	1-124-925-11	ELECT	2.2MF	20%	50V
C724	1-124-910-11	ELECT	47MF	20%	50V
C725	1-123-875-11	ELECT	10MF	20%	50V
C726	1-123-875-11	ELECT	10MF	20%	50V
C727	1-130-489-00	MYLAR	0.033MF	5%	50V
C728	1-136-165-00	FILM	0.1MF	5%	50V
C729	1-162-282-31	CERAMIC	100PF	10%	50V
C730	1-162-286-31	CERAMIC	220PF	10%	50V
C731	1-130-477-00	MYLAR	0.0033MF	5%	50V
C748	1-124-180-00	ELECT	33MF	20%	25V
C769	1-124-925-11	ELECT	2.2MF	20%	50V
C770	1-162-286-31	CERAMIC	220PF	10%	50V
C773	1-124-925-11	ELECT	2.2MF	20%	50V
C774	1-124-910-11	ELECT	47MF	20%	50V
C777	1-130-489-00	MYLAR	0.033MF	5%	50V
C778	1-136-165-00	FILM	0.1MF	5%	50V
C780	1-162-286-31	CERAMIC	220PF	10%	50V
C781	1-130-477-00	MYLAR	0.0033MF	5%	50V
C798	1-124-180-00	ELECT	33MF	20%	25V
C799	1-124-472-11	ELECT	470MF	20%	6.3V
C801	1-124-477-11	ELECT	47MF	20%	25V
C802	1-124-477-11	ELECT	47MF	20%	25V
C803	1-162-282-31	CERAMIC	100PF	10%	50V
C804	1-136-173-00	FILM	0.47MF	5%	50V

Ref.No.	Part No.	Description			
C805	1-136-173-00	FILM	0.47MF	5%	50V
C806	1-136-156-00	FILM	0.018MF	5%	50V
C808	1-124-925-11	ELECT	2.2MF	20%	50V
C809	1-123-875-11	ELECT	10MF	20%	50V
C810	1-124-122-11	ELECT	100MF	20%	50V
C811	1-126-101-11	ELECT	100MF	20%	16V
C812	1-124-910-11	ELECT	47MF	20%	50V
C813	1-123-875-11	ELECT	10MF	20%	50V
C814	1-123-875-11	ELECT	10MF	20%	50V
C815	1-136-165-00	FILM	0.1MF	5%	50V
C816	1-130-489-00	MYLAR	0.033MF	5%	50V
C817	1-124-472-11	ELECT	470MF	20%	6.3V
C818	1-124-925-11	ELECT	2.2MF	20%	100V
C819	1-126-101-11	ELECT	100MF	20%	16V
C820	1-126-101-11	ELECT	100MF	20%	16V
C821	1-124-910-11	ELECT	47MF	20%	50V
C822	1-162-286-31	CERAMIC	220PF	10%	50V
C823	1-130-489-00	MYLAR	0.033MF	5%	50V
C824	1-162-290-31	CERAMIC	470PF	10%	50V
C825	1-162-286-31	CERAMIC	220PF	10%	50V
C826	1-162-290-31	CERAMIC	470PF	10%	50V
C827	1-124-767-00	ELECT	2.2MF	20%	50V
C828	1-136-165-00	FILM	0.1MF	5%	50V
C829	1-162-193-31	CERAMIC	3.3PF	10%	50V
C830	1-162-193-31	CERAMIC	3.3PF	10%	50V
C901	1-124-360-00	ELECT	1000MF	20%	16V
C902	1-124-499-11	ELECT	1MF	20%	50V
C903	1-123-875-11	ELECT	10MF	20%	50V
C904	1-124-465-00	ELECT	0.47MF	20%	50V
C906	1-124-911-11	ELECT	220MF	20%	50V
C907	1-124-920-11	ELECT	330MF	20%	63V
C908	1-126-105-11	ELECT	1000MF	20%	35V
C909	1-126-105-11	ELECT	1000MF	20%	35V
C910	1-136-165-00	FILM	0.1MF	5%	50V
C911	1-124-499-11	ELECT	1MF	20%	50V
C912	1-125-426-11	ELECT(BLOCK)	10000MF	20%	50V
C913	1-125-426-11	ELECT(BLOCK)	10000MF	20%	50V
C914	⚠1-161-744-00	CERAMIC	0.01MF		400V
C915	1-129-726-00	FILM	0.1MF	10%	630V
C916	1-126-101-11	ELECT	100MF	20%	16V
C917	1-124-261-00	ELECT	10MF	20%	50V
C951	1-124-606-11	CAP, ELECT (NONPOLAR) 39MF			
C952	1-124-606-11	CAP, ELECT (NONPOLAR) 39MF			
C953	1-130-574-00	CAP, POLYESTER FILM 0.47MF			
C1101	1-124-446-11	ELECT	47MF	20%	10V
C1102	1-124-446-11	ELECT	47MF	20%	10V
C1103	1-162-198-31	CERAMIC	8.2PF	10%	50V
C1104	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C1105	1-136-159-00	FILM	0.033MF	5%	50V
C1106	1-136-159-00	FILM	0.033MF	5%	50V
C1107	1-136-153-00	FILM	0.01MF	5%	50V
C1108	1-162-203-31	CERAMIC	15PF	5%	50V
C1109	1-162-203-31	CERAMIC	15PF	5%	50V
C1110	1-136-153-00	FILM	0.01MF	5%	50V
C1111	1-124-902-00	ELECT	0.47MF	20%	50V
C1112	1-162-203-31	CERAMIC	15PF	5%	50V
C1113	1-162-203-31	CERAMIC	15PF	5%	50V

Ref.No.	Part No.	Description			
C1114	1-162-294-31	CERAMIC	0.001MF	10%	50V
C1115	1-162-203-31	CERAMIC	15PF	5%	50V
C1116	1-162-203-31	CERAMIC	15PF	5%	50V
C1201	1-136-165-00	FILM	0.1MF	5%	50V
C1202	1-136-159-00	FILM	0.033MF	5%	50V
C1203	1-123-382-00	ELECT	3.3MF	20%	50V
C1204	1-136-165-00	FILM	0.1MF	5%	50V
C1205	1-162-282-31	CERAMIC	100PF	10%	50V
C1207	1-123-875-11	ELECT	10MF	20%	50V
C1210	1-136-169-00	FILM	0.22MF	5%	50V
C1213	1-124-499-11	ELECT	1MF	20%	50V
C1214	1-124-927-11	ELECT	4.7MF	20%	50V
C1215	1-130-479-00	MYLAR	0.0047MF	5%	50V
C1216	1-124-446-11	ELECT	47MF	20%	10V
C1217	1-162-294-31	CERAMIC	0.001MF	10%	50V
C1218	1-124-902-00	ELECT	0.47MF	20%	50V
C1219	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C1220	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C1221	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C1226	1-136-165-00	FILM	0.1MF	5%	50V
C1227	1-136-165-00	FILM	0.1MF	5%	50V
C1229	1-136-159-00	FILM	0.033MF	5%	50V
C1303	1-162-203-31	CERAMIC	15PF	5%	50V
C1304	1-162-203-31	CERAMIC	15PF	5%	50V
C1401	1-136-520-11	FILM	0.0018MF	5	100V
C1407	1-162-179-11	CERAMIC	0.1MF		50V
C1408	1-162-179-11	CERAMIC	0.1MF		50V
C1409	1-162-179-11	CERAMIC	0.1MF		50V
C1410	1-162-179-11	CERAMIC	0.1MF		50V
C1411	1-162-179-11	CERAMIC	0.1MF		50V
C1412	1-162-179-11	CERAMIC	0.1MF		50V
C1413	1-162-179-11	CERAMIC	0.1MF		50V
C1416	1-124-478-11	ELECT	100MF	20%	25V
C1417	1-124-478-11	ELECT	100MF	20%	25V
C1418	1-124-478-11	ELECT	100MF	20%	25V
C1420	1-136-356-11	FILM	470PF	5%	100V
C1421	1-124-908-11	ELECT	22MF	20%	50V
C1501	1-136-520-11	FILM	0.0018MF	5	100V
C1507	1-162-179-11	CERAMIC	0.1MF		50V
C1508	1-162-179-11	CERAMIC	0.1MF		50V
C1509	1-162-179-11	CERAMIC	0.1MF		50V
C1510	1-162-179-11	CERAMIC	0.1MF		50V
C1511	1-162-179-11	CERAMIC	0.1MF		50V
C1512	1-162-179-11	CERAMIC	0.1MF		50V
C1513	1-162-179-11	CERAMIC	0.1MF		50V
C1521	1-124-908-11	ELECT	22MF	20%	50V
C1901	1-124-898-11	ELECT	4700MF	20%	16V
C1902	1-124-898-11	ELECT	4700MF	20%	16V
C1903	1-124-120-11	ELECT	220MF	20%	25V
C1904	1-124-120-11	ELECT	220MF	20%	25V
C1905	1-124-120-11	ELECT	220MF	20%	25V
C1906	1-124-120-11	ELECT	220MF	20%	25V
C1907	1-124-478-11	ELECT	100MF	20%	25V
C1908	1-124-636-00	ELECT	3300MF	20%	25V
C1909	1-124-636-00	ELECT	3300MF	20%	25V
C1910	1-124-927-11	ELECT	4.7MF	20%	50V
C1911	1-124-927-11	ELECT	4.7MF	20%	50V

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Ref.No.	Part No.	Description			
C1912	1-124-927-11	ELECT	4.7MF	20%	50V
C1913	1-124-927-11	ELECT	4.7MF	20%	50V
C1914	1-124-927-11	ELECT	4.7MF	20%	50V
C1915	1-124-927-11	ELECT	4.7MF	20%	50V
C1916	1-124-927-11	ELECT	4.7MF	20%	50V
C1917	1-136-165-00	FILM	0.1MF	5%	50V
C1918	1-124-908-11	ELECT	22MF	20%	50V
C1919	1-124-462-00	ELECT	10MF	20%	16V
C1920	1-124-462-00	ELECT	10MF	20%	16V
C1921	1-124-443-00	ELECT	100MF	20%	6.3V
C1922	1-124-443-00	ELECT	100MF	20%	6.3V
C1925	1-124-443-00	ELECT	100MF	20%	6.3V
C1926	1-124-443-00	ELECT	100MF	20%	6.3V
C1928	1-136-173-00	FILM	0.47MF	5%	50V
C1929	1-136-173-00	FILM	0.47MF	5%	50V
C1930	1-136-173-00	FILM	0.47MF	5%	50V
C1931	1-136-173-00	FILM	0.47MF	5%	50V
C1932	1-136-173-00	FILM	0.47MF	5%	50V
C1933	1-136-165-00	(WEST GERMANY)...FILM	0.1MF	5%	50V
C1934	1-136-165-00	(WEST GERMANY)...FILM	0.1MF	5%	50V
C1936	1-136-173-00	(WEST GERMANY)...FILM	0.47MF	5%	50V
C1937	1-161-494-00	(WEST GERMANY)...CERAMIC	0.022MF	30%	25V
C1938	1-136-173-00	(WEST GERMANY)...FILM	0.47MF	5%	50V
C1941	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1942	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1943	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1944	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1945	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1946	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1947	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1948	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1951	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1949	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
C1950	1-162-851-11	(WEST GERMANY)...CERAMIC	0.1MF	10%	16V
CB901⚠	1-532-534-00	CIRKIT BREAKER			
CF101	1-567-389-11	FILTER, CERAMIC			
CF102	1-567-389-11	FILTER, CERAMIC			
CF103	1-567-389-11	FILTER, CERAMIC			
CF104	1-567-250-11	OSCILLATOR, CERAMIC			
CF401	1-527-822-00	OSCILLATOR, CERAMIC			
CNJ101	1-507-567-00	PIN JACK 1P			
CNP101*1-564-704-11		PIN, CONNECTOR (SMALL TYPE) 2P			
CNP102*1-564-342-11		PIN, CONNECTOR 8P			
CNP103*1-564-708-11		PIN, CONNECTOR (SMALL TYPE) 6P			
CNP104*1-564-512-11		PLUG, CONNECTOR 9P			
CNP107*1-564-508-11		PLUG, CONNECTOR 5P			
CNP108*1-564-510-11		PLUG, CONNECTOR 7P			
CNP113*1-560-060-00		PIN, CONNECTOR 2P			
CNP301*1-564-342-11		PIN, CONNECTOR 8P			
CNP302*1-564-507-11		PLUG, CONNECTOR 4P			
CNP303*1-506-503-11		PIN, CONNECTOR 9P			
CNP304*1-564-705-21		PIN, CONNECTOR (SMALL TYPE) 3P			
CNP305*1-564-708-11		PIN, CONNECTOR (SMALL TYPE) 6P			
CNP306*1-564-336-00		PIN, CONNECTOR 2P			
CNP307*1-560-070-00		BASE POST 5P			
CNP601*1-564-506-11		PLUG, CONNECTOR 3P			

Ref.No.	Part No.	Description
CNP602*1-564-512-11		PLUG, CONNECTOR 9P
CNP603*1-506-371-00		2P PLUG (L)
CNP604*1-564-507-31		PLUG, CONNECTOR 4P
CNP605*1-564-508-11		PLUG, CONNECTOR 5P
CNP606*1-564-506-11		PLUG, CONNECTOR 3P
CNP607*1-506-371-00		(WEST GERMANY)...2P PLUG (L)
CNP608*1-506-371-00		(WEST GERMANY)...2P PLUG (L)
CNP609*1-564-507-31		(WEST GERMANY)...PLUG, CONNECTOR 4P
CNP610*1-564-507-11		(WEST GERMANY)...PLUG, CONNECTOR 4P
CNP651*1-564-506-11		PLUG, CONNECTOR 3P
CNP652*1-564-512-11		PLUG, CONNECTOR 9P
CNP653*1-564-512-11		PLUG, CONNECTOR 9P
CNP654*1-564-704-11		PIN, CONNECTOR (SMALL TYPE) 2P
CNP655*1-564-508-11		PLUG, CONNECTOR 5P
CNP656*1-564-507-11		PLUG, CONNECTOR 4P
CNP657*1-560-061-00		PIN, CONNECTOR 3P
CNP658*1-564-508-11		PLUG, CONNECTOR 5P
CNP659*1-564-243-00		PIN, CONNECTOR 6P
CNP660*1-564-915-11		PIN, CONNECTOR 7P
CNP661*1-564-507-31		PLUG, CONNECTOR 4P
CNP662*1-560-062-00		PIN, CONNECTOR 4P
CNP663*1-560-061-00		PIN, CONNECTOR 3P
CNP664*1-564-707-11		PIN, CONNECTOR (SMALL TYPE) 5P
CNP665*1-560-064-00		PIN, CONNECTOR 6P
CNP666*1-560-063-00		PIN, CONNECTOR 5P
CNP667*1-560-063-00		PIN, CONNECTOR 5P
CNP670*1-564-104-00		PIN, CONNECTOR 3P
CNP701*1-564-508-11		PLUG, CONNECTOR 5P
CNP703*1-560-062-00		PIN, CONNECTOR 4P
CNP704*1-564-707-11		PIN, CONNECTOR (SMALL TYPE) 5P
CNP705*1-560-061-00		PIN, CONNECTOR 3P
CNP711*1-564-506-11		PLUG, CONNECTOR 3P
CNP712*1-564-510-21		PLUG, CONNECTOR 7P
CNP713*1-564-506-11		PLUG, CONNECTOR 3P
CNP714*1-564-510-11		PLUG, CONNECTOR 7P
CNP901*1-564-510-11		PLUG, CONNECTOR 7P
CNP902*1-564-507-11		PLUG, CONNECTOR 4P
CNP903*1-560-064-00		PIN, CONNECTOR 6P
CNP904*1-564-507-31		PLUG, CONNECTOR 4P
CNP907*1-564-508-11		PLUG, CONNECTOR 5P
CNP908*1-564-506-11		PLUG, CONNECTOR 3P
CNP910*1-506-371-00		2P PLUG (L)
CNP1001*1-564-708-11		PIN, CONNECTOR (SMALL TYPE) 6P
CNP1002*1-560-063-00		PIN, CONNECTOR 5P
CNP1003*1-564-705-21		PIN, CONNECTOR (SMALL TYPE) 3P
CNP1004*1-506-503-11		PIN, CONNECTOR 9P
CNP1005*1-564-339-00		PIN, CONNECTOR 5P
CNP1011*1-564-710-11		PIN, CONNECTOR (SMALL TYPE) 8P
CNP1012*1-564-706-31		PIN, CONNECTOR (SMALL TYPE) 4P
CNP1013*1-564-705-11		PIN, CONNECTOR (SMALL TYPE) 3P
CNP1014*1-564-336-00		PIN, CONNECTOR 2P
CNP1015*1-564-706-11		PIN, CONNECTOR (SMALL TYPE) 4P
CNP1016*1-564-706-41		PIN, CONNECTOR (SMALL TYPE) 4P
CNP1101*1-564-708-11		PIN, CONNECTOR (SMALL TYPE) 6P

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Ref.No.	Part No.	Description		
CP902	1-102-355-00	CERAMIC	0.01MF	250V
CP903	1-102-355-00	CERAMIC	0.01MF	250V
CP904	1-102-355-00	CERAMIC	0.01MF	250V
CP905	1-102-355-00	CERAMIC	0.01MF	250V
CP953	1-102-355-00	CERAMIC	0.01MF	250V
CP954	1-102-355-00	CERAMIC	0.01MF	250V
D101	8-719-940-76	DIODE 1SS132		
D102	8-719-940-76	DIODE 1SS132		
D103	8-719-940-76	DIODE 1SS132		
D104	8-719-933-41	DIODE HZS6C3L		
D401	8-719-940-76	DIODE 1SS132		
D402	8-719-940-76	DIODE 1SS132		
D403	8-719-940-76	DIODE 1SS132		
D404	8-719-940-76	DIODE 1SS132		
D405	8-719-940-76	DIODE 1SS132		
D406	8-719-940-76	DIODE 1SS132		
D407	8-719-940-76	DIODE 1SS132		
D408	8-719-940-76	DIODE 1SS132		
D409	8-719-940-76	DIODE 1SS132		
D410	8-719-303-13	DIODE SEL1210W		
D411	8-719-940-76	DIODE 1SS132		
D412	8-719-940-76	DIODE 1SS132		
D413	8-719-940-76	DIODE 1SS132		
D414	8-719-940-76	DIODE 1SS132		
D415	8-719-940-76	DIODE 1SS132		
D701	8-719-940-69	DIODE 1SS131		
D702	8-719-940-69	DIODE 1SS131		
D703	8-719-940-76	DIODE 1SS132		
D704	8-719-940-76	DIODE 1SS132		
D705	8-719-940-76	DIODE 1SS132		
D753	8-719-940-76	DIODE 1SS132		
D801	8-719-940-76	DIODE 1SS132		
D802	8-719-940-76	DIODE 1SS132		
D901	8-719-940-76	DIODE 1SS132		
D902	8-719-940-76	DIODE 1SS132		
D903	8-719-940-76	DIODE 1SS132		
D904	8-719-940-76	DIODE 1SS132		
D906	8-719-940-76	DIODE 1SS132		
D907	8-719-937-50	DIODE DF02M		
D912	8-719-933-41	DIODE HZS6C3L		
D913	8-719-931-06	DIODE EQB01-06		
D917	8-719-934-23	DIODE HZS30-3L		
D918	8-719-200-77	DIODE 10E2N		
D919	8-719-914-11	DIODE HZ4ALL		
D920	8-719-914-11	DIODE HZ4ALL		
D951	8-719-511-40	DIODE S1VB40		
D952	8-719-511-40	DIODE S1VB40		
D953	8-719-300-25	DIODE CTU-22R		
D954	8-719-300-27	DIODE CTU-22S		
D1001	8-719-940-76	DIODE 1SS132		
D1002	8-719-940-76	DIODE 1SS132		
D1003	8-719-940-76	DIODE 1SS132		
D1901	8-719-948-95	DIODE KBU4D		
D1902	8-719-937-50	DIODE DF02M		
FE101	1-463-857-11	FRONT END (FM)		
FE102	1-236-074-11	ENCAPSULATED COMPONENT		

Ref.No.	Part No.	Description
FLD301	1-519-430-11	INDICATOR TUBE, FLUORESCENT
FLD302	1-519-431-11	INDICATOR TUBE, FLUORESCENT
IC101	8-759-305-23	IC HD614022FG60
IC102	8-757-925-20	IC CX-7925B
IC103	8-759-801-80	IC LA3401
IC104	8-759-801-81	IC LA1265
IC105	8-757-890-00	IC CX-789
IC106	8-759-106-41	IC UPC4570C
IC107	8-759-106-41	IC UPC4570C
IC108	8-759-708-05	IC NJM78L05A
IC401	8-759-305-22	IC HD614080FB25
IC402	8-759-945-74	IC MSM6402A-201GS-K
IC403	8-752-802-24	IC CXP5016H-206S
IC405	8-759-245-28	IC TC4528BP
IC406	8-759-202-12	IC TC74HC02P
IC407	8-759-202-11	IC TC74HC00P
IC701	8-759-106-41	IC UPC4570C
IC702	8-759-106-41	IC UPC4570C
IC703	8-749-941-91	IC STK4191V
IC801	8-759-106-41	IC UPC4570C
IC803	8-749-941-91	IC STK4191V
IC901	8-759-605-34	IC M5F7815
IC902	8-759-012-72	IC MC7915CT
IC1001	8-752-030-93	IC CXA1081M
IC1002	8-752-031-61	IC CXA1082AQ
IC1003	8-759-303-90	IC STA341M
IC1004	8-759-202-01	IC TA7256P
IC1006	8-752-322-04	IC CXD1125Q
IC1007	8-759-802-74	IC LC3516AML-15
IC1008	8-759-939-35	IC CXD1088Q
IC1009	8-759-939-94	IC TDA1541-N5
IC1010	8-759-900-72	IC NE5532P
IC1012	8-759-940-62	IC MSM6404A-180RS
IC1015	8-759-140-96	IC UPD75104CW-091
IC1016	8-759-202-74	IC TC74HC04P
IC1101	8-759-927-77	IC CXD1079Q
IC1102	8-759-927-77	IC CXD1079Q
IC1103	8-759-929-47	IC MB81464-10
IC1104	8-759-929-47	IC MB81464-10
IC1105	8-759-929-47	IC MB81464-10
IC1106	8-759-929-47	IC MB81464-10
IC1107	8-759-929-47	IC MB81464-10
IC1108	8-759-929-47	IC MB81464-10
IC1109	8-759-929-47	IC MB81464-10
IC1110	8-759-929-47	IC MB81464-10
IC1112	8-759-202-74	IC TC74HC04P
IC1113	8-759-202-27	IC TC74HC157P
IC1114	8-759-970-26	IC PST523C
IC1901	8-759-013-06	IC MC7805CT
IC1902	8-759-013-06	IC MC7805CT
IC1903	8-759-012-67	IC MC7905CT
IC1904	8-759-602-66	IC M5230L-A
IC1905	8-759-602-66	IC M5230L-A
IC1906	8-759-605-43	IC M5231TL
J602	1-507-912-41	JACK, PIN 2P
J603	1-507-909-31	JACK, PIN 4P
J605	1-507-804-00	JACK

Ref.No.	Part No.	Description
J651	1-507-567-00	PIN JACK 1P
J652	1-507-567-00	PIN JACK 1P
L101	1-410-521-11	INDUCTOR 100UH
L102	1-410-521-11	INDUCTOR 100UH
L105	1-408-920-00	INDUCTOR 4.7MMH
L301	1-410-328-11	INDUCTOR 10UH
L302	1-410-328-11	INDUCTOR 10UH
L303	1-410-328-11	INDUCTOR 10UH
L401	1-410-509-11	INDUCTOR 10UH
L601	1-409-440-11	(WEST GERMANY)...COIL (FILTER)
L602	1-409-443-11	(WEST GERMANY)...COIL (FILTER)
L603	1-409-441-11	(WEST GERMANY)...COIL (FILTER)
L613	1-409-438-11	(WEST GERMANY)...COIL (FILTER)
L614	1-409-438-11	(WEST GERMANY)...COIL (FILTER)
L615	1-409-438-11	(WEST GERMANY)...COIL (FILTER)
L616	1-409-438-11	(WEST GERMANY)...COIL (FILTER)
L701	*1-420-872-00	COIL, AIR CORE
L751	*1-420-872-00	COIL, AIR CORE
L801	*1-420-872-00	COIL, AIR CORE
L802	*1-420-872-00	COIL, AIR CORE
L901	1-424-038-11	COIL, LINE FILTER
L902	⚠1-424-038-11	(WEST GERMANY)...COIL, LINE FILTER
L903	⚠1-424-038-11	(WEST GERMANY)...COIL, LINE FILTER
L951	*1-459-494-00	COIL, NETWORK (0.12MMH)
L1001	1-410-328-11	INDUCTOR 10UH
LPF101	1-235-221-00	FILTER, LOW PASS
LPF501	1-464-853-11	FILTER UNIT, LOW PASS
M251	A-4608-320-A	MOTOR ASSY, L
M252	X-4917-504-1	MOTOR ASSY (SLED)
M253	X-4917-523-1	BASE ASSY (SPINDLE MOTOR)
PS901	⚠1-532-605-00	LINK, IC 0.4A
PS902	⚠1-532-605-00	LINK, IC 0.4A
PS1901	⚠1-532-686-00	LINK, IC 1.5A
PS1902	⚠1-532-686-00	LINK, IC 1.5A
PS1903	⚠1-532-686-00	LINK, IC 1.5A
PS1904	⚠1-532-686-00	LINK, IC 1.5A
Q101	8-729-806-16	TRANSISTOR 2SA1346
Q102	8-729-806-16	TRANSISTOR 2SA1346
Q103	8-729-115-83	TRANSISTOR BA1A3Q
Q104	8-729-266-93	TRANSISTOR 2SC2669
Q105	8-729-266-93	TRANSISTOR 2SC2669
Q106	8-729-266-93	TRANSISTOR 2SC2669
Q107	8-729-266-93	TRANSISTOR 2SC2669
Q108	8-729-201-83	TRANSISTOR 2SC3112
Q109	8-729-202-67	TRANSISTOR 2SK246GR3
Q110	8-729-806-34	TRANSISTOR 2SC3400
Q111	8-729-806-34	TRANSISTOR 2SC3400
Q112	8-729-117-54	TRANSISTOR 2SA1175
Q113	8-729-117-54	TRANSISTOR 2SA1175
Q114	8-729-900-61	TRANSISTOR DTA114ES
Q401	8-729-115-15	TRANSISTOR BN1A4M
Q402	8-729-115-15	TRANSISTOR BN1A4M
Q403	8-729-115-15	TRANSISTOR BN1A4M
Q404	8-729-115-15	TRANSISTOR BN1A4M
Q405	8-729-115-15	TRANSISTOR BN1A4M
Q406	8-729-115-15	TRANSISTOR BN1A4M
Q407	8-729-115-15	TRANSISTOR BN1A4M

Ref.No.	Part No.	Description
Q408	8-729-115-15	TRANSISTOR BN1A4M
Q409	8-729-115-15	TRANSISTOR BN1A4M
Q410	8-729-115-15	TRANSISTOR BN1A4M
Q411	8-729-115-15	TRANSISTOR BN1A4M
Q412	8-729-115-15	TRANSISTOR BN1A4M
Q413	8-729-115-15	TRANSISTOR BA1A4M
Q414	8-729-600-27	TRANSISTOR 2SC634SP
Q415	8-729-600-27	TRANSISTOR 2SC634SP
Q416	8-729-600-27	TRANSISTOR 2SC634SP
Q417	8-729-600-27	TRANSISTOR 2SC634SP
Q702	8-729-224-61	TRANSISTOR 2SK246
Q704	8-729-108-14	TRANSISTOR 2SA988-F
Q705	8-729-600-27	TRANSISTOR 2SC634SP
Q706	8-729-901-57	TRANSISTOR DTC143XS
Q754	8-729-108-14	TRANSISTOR 2SA988-F
Q798	8-729-178-54	TRANSISTOR 2SC2785
Q799	8-729-178-54	TRANSISTOR 2SC2785
Q801	8-729-108-14	TRANSISTOR 2SA988-F
Q802	8-729-108-14	TRANSISTOR 2SA988-F
Q803	8-729-178-54	TRANSISTOR 2SC2785
Q804	8-729-178-54	TRANSISTOR 2SC2785
Q805	8-729-178-54	TRANSISTOR 2SC2785
Q901	8-729-103-43	TRANSISTOR 2SB734
Q903	8-729-107-26	TRANSISTOR 2SD1585-K
Q910	8-729-806-16	TRANSISTOR 2SA1346
Q911	8-729-806-16	TRANSISTOR 2SA1346
Q912	8-729-115-15	TRANSISTOR BN1A4M
Q913	8-729-117-54	TRANSISTOR 2SA1175
Q915	8-729-178-54	TRANSISTOR 2SC2785
Q1001	8-729-177-43	TRANSISTOR 2SD774
Q1002	8-729-107-26	TRANSISTOR 2SD1585-K
Q1003	8-729-103-43	TRANSISTOR 2SB734
Q1004	8-729-806-38	TRANSISTOR 2SC3399
Q1005	8-729-900-89	TRANSISTOR DTC144ES
Q1006	8-729-900-74	TRANSISTOR DTC143TS
Q1007	8-729-900-89	TRANSISTOR DTC144ES
Q1008	8-729-900-89	TRANSISTOR DTC144ES
Q1009	8-729-900-89	TRANSISTOR DTC144ES
Q1010	8-729-900-89	TRANSISTOR DTC144ES
Q1011	8-729-115-15	TRANSISTOR BN1A4M
Q1013	8-729-600-27	TRANSISTOR 2SC634SP
Q1014	8-729-107-26	TRANSISTOR 2SD1585-K
Q1015	8-729-107-26	TRANSISTOR 2SD1585-K
Q1016	8-729-111-67	TRANSISTOR 2SB1094-L
Q1017	8-729-111-67	TRANSISTOR 2SB1094-L
Q1018	8-729-900-89	TRANSISTOR DTC144ES
R101	1-249-429-11	CARBON 10K 5% 1/4W
R102	1-249-434-11	CARBON 27K 5% 1/4W
R103	1-249-417-11	CARBON 1K 5% 1/4W
R104	⚠1-247-700-11	CARBON 100 5% 1/4W F
R105	1-249-411-11	CARBON 330 5% 1/4W
R106	1-249-411-11	CARBON 330 5% 1/4W
R107	1-249-441-11	CARBON 100K 5% 1/4W
R108	1-249-411-11	CARBON 330 5% 1/4W
R109	1-249-432-11	CARBON 18K 5% 1/4W
R110	1-249-418-11	CARBON 1.2K 5% 1/4W
R111	1-249-411-11	CARBON 330 5% 1/4W
R112	1-249-434-11	CARBON 27K 5% 1/4W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				
R113	1-249-411-11	CARBON	330	5%	1/4W	
R114	1-249-432-11	CARBON	18K	5%	1/4W	
R115	1-249-418-11	CARBON	1.2K	5%	1/4W	
R116	1-249-411-11	CARBON	330	5%	1/4W	
R117	1-249-434-11	CARBON	27K	5%	1/4W	
R118	1-249-417-11	CARBON	1K	5%	1/4W	
R119	1-249-435-11	CARBON	33K	5%	1/4W	
R120	1-249-433-11	CARBON	22K	5%	1/4W	
R121	1-249-426-11	CARBON	5.6K	5%	1/4W	
R122	1-249-405-11	CARBON	100	5%	1/4W	
R123	1-249-423-11	CARBON	3.3K	5%	1/4W	
R124	1-249-429-11	CARBON	10K	5%	1/4W	
R125	1-249-429-11	CARBON	10K	5%	1/4W	
R126	1-249-437-11	CARBON	47K	5%	1/4W	
R127	⚠1-247-706-11	CARBON	330	5%	1/4W	F
R128	⚠1-247-701-11	CARBON	120	5%	1/4W	F
R129	1-249-425-11	CARBON	4.7K	5%	1/4W	
R130	1-249-417-11	CARBON	1K	5%	1/4W	
R131	1-249-417-11	CARBON	1K	5%	1/4W	
R132	1-249-441-11	CARBON	100K	5%	1/4W	
R133	1-247-881-00	CARBON	120K	5%	1/4W	
R134	1-247-883-00	CARBON	150K	5%	1/4W	
R135	1-249-423-11	CARBON	3.3K	5%	1/4W	
R136	1-247-883-00	CARBON	150K	5%	1/4W	
R137	1-247-881-00	CARBON	120K	5%	1/4W	
R138	1-249-423-11	CARBON	3.3K	5%	1/4W	
R139	1-249-437-11	CARBON	47K	5%	1/4W	
R140	1-249-429-11	CARBON	10K	5%	1/4W	
R141	1-249-429-11	CARBON	10K	5%	1/4W	
R142	1-249-429-11	CARBON	10K	5%	1/4W	
R143	1-249-425-11	CARBON	4.7K	5%	1/4W	
R144	1-249-414-11	CARBON	560	5%	1/4W	
R145	1-249-414-11	CARBON	560	5%	1/4W	
R146	1-249-411-11	CARBON	330	5%	1/4W	
R147	1-249-418-11	CARBON	1.2K	5%	1/4W	
R148	1-249-421-11	CARBON	2.2K	5%	1/4W	
R149	1-249-425-11	CARBON	4.7K	5%	1/4W	
R150	1-249-423-11	CARBON	3.3K	5%	1/4W	
R151	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R152	1-249-429-11	CARBON	10K	5%	1/4W	
R153	1-249-421-11	CARBON	2.2K	5%	1/4W	
R154	1-249-415-11	CARBON	680	5%	1/4W	
R155	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R156	1-249-417-11	CARBON	1K	5%	1/4W	
R301	1-249-429-11	CARBON	10K	5%	1/4W	
R302	1-249-417-11	CARBON	1K	5%	1/4W	
R303	1-249-441-11	CARBON	100K	5%	1/4W	
R304	1-249-441-11	CARBON	100K	5%	1/4W	
R305	1-249-441-11	CARBON	100K	5%	1/4W	
R306	1-215-493-00	CARBON	1M	5%	1/4W	
R307	1-215-493-00	CARBON	1M	5%	1/4W	
R308	1-249-429-11	CARBON	10K	5%	1/4W	
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-249-429-11	CARBON	10K	5%	1/4W	
R313	1-249-429-11	CARBON	10K	5%	1/4W	

Ref.No.	Part No.	Description				
R314	1-249-429-11	CARBON	10K	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R316	1-249-429-11	CARBON	10K	5%	1/4W	
R317	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-249-429-11	CARBON	10K	5%	1/4W	
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	
R323	1-249-417-11	CARBON	1K	5%	1/4W	
R324	1-249-441-11	CARBON	100K	5%	1/4W	
R325	1-249-417-11	CARBON	1K	5%	1/4W	
R326	1-249-441-11	CARBON	100K	5%	1/4W	
R327	1-249-425-11	CARBON	4.7K	5%	1/4W	
R328	1-249-441-11	CARBON	100K	5%	1/4W	
R329	1-249-441-11	CARBON	100K	5%	1/4W	
R330	1-249-441-11	CARBON	100K	5%	1/4W	
R331	1-249-441-11	CARBON	100K	5%	1/4W	
R332	1-249-441-11	CARBON	100K	5%	1/4W	
R333	1-249-441-11	CARBON	100K	5%	1/4W	
R334	1-249-417-11	CARBON	1K	5%	1/4W	
R335	1-249-417-11	CARBON	1K	5%	1/4W	
R336	1-249-417-11	CARBON	1K	5%	1/4W	
R337	1-249-417-11	CARBON	1K	5%	1/4W	
R338	1-249-441-11	CARBON	100K	5%	1/4W	
R339	1-215-493-00	CARBON	1M	5%	1/4W	
R340	1-215-493-00	CARBON	1M	5%	1/4W	
R341	1-249-415-11	CARBON	680	5%	1/4W	
R342	1-249-429-11	CARBON	10K	5%	1/4W	
R343	1-249-429-11	CARBON	10K	5%	1/4W	
R345	1-249-441-11	CARBON	100K	5%	1/4W	
R346	1-249-441-11	CARBON	100K	5%	1/4W	
R347	1-249-441-11	CARBON	100K	5%	1/4W	
R348	1-249-429-11	CARBON	10K	5%	1/4W	
R349	1-249-441-11	CARBON	100K	5%	1/4W	
R350	1-249-441-11	CARBON	100K	5%	1/4W	
R351	1-249-441-11	CARBON	100K	5%	1/4W	
R352	1-249-441-11	CARBON	100K	5%	1/4W	
R353	1-249-441-11	CARBON	100K	5%	1/4W	
R354	1-249-401-11	CARBON	47	5%	1/4W	
R355	1-249-441-11	CARBON	100K	5%	1/4W	
R356	1-249-441-11	CARBON	100K	5%	1/4W	
R357	1-249-429-11	CARBON	10K	5%	1/4W	
R358	1-247-895-00	CARBON	470K	5%	1/4W	
R359	1-249-429-11	CARBON	10K	5%	1/4W	
R360	1-249-429-11	CARBON	10K	5%	1/4W	
R361	1-249-429-11	CARBON	10K	5%	1/4W	
R401	1-249-433-11	CARBON	22K	5%	1/4W	
R402	1-215-493-00	CARBON	1M	5%	1/4W	
R403	1-247-895-00	CARBON	470K	5%	1/4W	
R404	1-249-429-11	CARBON	10K	5%	1/4W	
R405	1-249-417-11	CARBON	1K	5%	1/4W	
R406	1-249-429-11	CARBON	10K	5%	1/4W	
R407	1-249-417-11	CARBON	1K	5%	1/4W	
R408	1-249-417-11	CARBON	1K	5%	1/4W	
R412	1-249-431-11	CARBON	15K	5%	1/4W	
R413	1-249-431-11	CARBON	15K	5%	1/4W	

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Ref.No.	Part No.	Description			
R414	1-249-431-11	CARBON	15K	5%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-429-11	CARBON	10K	5%	1/4W
R423	1-249-429-11	CARBON	10K	5%	1/4W
R501	1-249-427-11	CARBON	6.8K	5%	1/4W
R502	1-249-429-11	CARBON	10K	5%	1/4W
R503	1-249-427-11	CARBON	6.8K	5%	1/4W
R504	1-249-429-11	CARBON	10K	5%	1/4W
R505	1-249-393-11	CARBON	10	5%	1/4W
R506	1-249-393-11	CARBON	10	5%	1/4W
R544	1-249-437-11	CARBON	47K	5%	1/4W
R545	1-249-437-11	CARBON	47K	5%	1/4W
R546	1-215-493-00	CARBON	1M	5%	1/4W
R547	1-249-417-11	CARBON	1K	5%	1/4W
R548	1-247-887-00	CARBON	220K	5%	1/4W
R549	1-249-425-11	CARBON	4.7K	5%	1/4W
R550	1-247-887-00	CARBON	220K	5%	1/4W
R551	1-215-493-00	CARBON	1M	5%	1/4W
R552	1-249-417-11	CARBON	1K	5%	1/4W
R553	1-249-430-11	CARBON	12K	5%	1/4W
R554	1-249-425-11	CARBON	4.7K	5%	1/4W
R555	1-247-887-00	CARBON	220K	5%	1/4W
R556	1-249-417-11	CARBON	1K	5%	1/4W
R557	1-249-426-11	CARBON	5.6K	5%	1/4W
R558	1-249-426-11	CARBON	5.6K	5%	1/4W
R559	1-249-425-11	CARBON	4.7K	5%	1/4W
R560	1-249-425-11	CARBON	4.7K	5%	1/4W
R561	1-249-425-11	CARBON	4.7K	5%	1/4W
R562	1-247-887-00	CARBON	220K	5%	1/4W
R563	1-249-430-11	CARBON	12K	5%	1/4W
R564	1-249-441-11	CARBON	100K	5%	1/4W
R565	1-249-441-11	CARBON	100K	5%	1/4W
R601	⚠1-249-482-11	(WEST GERMANY)...CARBON	4.7	5%	1/2W F
R602	⚠1-249-482-11	(WEST GERMANY)...CARBON	4.7	5%	1/2W F
R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R705	1-249-422-11	CARBON	2.7K	5%	1/4W
R706	1-215-480-00	CARBON	300K	5%	1/4W
R708	1-249-421-11	CARBON	2.2K	5%	1/4W
R709	1-249-441-11	CARBON	100K	5%	1/4W
R710	1-249-423-11	CARBON	3.3K	5%	1/4W
R711	1-249-421-11	CARBON	2.2K	5%	1/4W
R716	1-249-432-11	CARBON	18K	5%	1/4W
R717	1-249-432-11	CARBON	18K	5%	1/4W
R718	1-215-489-00	CARBON	680K	5%	1/4W
R719	1-249-437-11	CARBON	47K	5%	1/4W
R720	1-249-417-11	CARBON	1K	5%	1/4W
R721	1-249-419-11	CARBON	1.5K	5%	1/4W
R722	1-249-426-11	CARBON	5.6K	5%	1/4W
R723	1-249-418-11	CARBON	1.2K	5%	1/4W
R724	1-249-439-11	CARBON	68K	5%	1/4W
R725	1-249-401-11	CARBON	47	5%	1/4W
R728	1-249-421-11	CARBON	2.2K	5%	1/4W
R729	1-249-441-11	CARBON	100K	5%	1/4W
R730	1-249-438-11	CARBON	56K	5%	1/4W
R731	1-249-466-11	CARBON	56K	5%	1/4W
R732	1-249-414-11	CARBON	560	5%	1/4W

Ref.No.	Part No.	Description			
R733	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R734	1-247-758-11	CARBON	3.3K	5%	1/2W
R735	1-247-758-11	CARBON	3.3K	5%	1/2W
R736	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R737	1-247-752-11	CARBON	1K	5%	1/2W
R738	1-247-752-11	CARBON	1K	5%	1/2W
R739	1-249-419-11	CARBON	1.5K	5%	1/4W
R740	1-249-431-11	CARBON	15K	5%	1/4W
R741	1-217-156-00	RES, METAL PLATE 0.22			
R742	1-249-433-11	CARBON	22K	5%	1/4W
R743	⚠1-247-727-11	CARBON	10	5%	1/2W F
R744	⚠1-247-727-11	CARBON	10	5%	1/2W F
R745	⚠1-206-715-00	METAL OXIDE	390	5%	3W F
R746	1-249-421-11	CARBON	2.2K	5%	1/4W
R747	1-249-441-11	CARBON	100K	5%	1/4W
R748	1-249-441-11	CARBON	100K	5%	1/4W
R749	1-249-401-11	CARBON	47	5%	1/4W
R760	1-249-423-11	CARBON	3.3K	5%	1/4W
R761	1-249-421-11	CARBON	2.2K	5%	1/4W
R775	1-249-401-11	CARBON	47	5%	1/4W
R778	1-249-421-11	CARBON	2.2K	5%	1/4W
R779	1-249-441-11	CARBON	100K	5%	1/4W
R780	1-249-438-11	CARBON	56K	5%	1/4W
R781	1-249-466-11	CARBON	56K	5%	1/4W
R782	1-249-414-11	CARBON	560	5%	1/4W
R784	1-247-758-11	CARBON	3.3K	5%	1/2W
R785	1-247-758-11	CARBON	3.3K	5%	1/2W
R789	1-249-419-11	CARBON	1.5K	5%	1/4W
R790	1-249-431-11	CARBON	15K	5%	1/4W
R791	1-217-156-00	RES, METAL PLATE 0.22			
R792	1-249-433-11	CARBON	22K	5%	1/4W
R793	⚠1-247-727-11	CARBON	10	5%	1/2W F
R794	⚠1-247-727-11	CARBON	10	5%	1/2W F
R795	⚠1-206-715-00	METAL OXIDE	390	5%	3W F
R799	1-249-401-11	CARBON	47	5%	1/4W
R801	1-249-433-11	CARBON	22K	5%	1/4W
R802	1-249-428-11	CARBON	8.2K	5%	1/4W
R803	1-249-428-11	CARBON	8.2K	5%	1/4W
R804	1-249-428-11	CARBON	8.2K	5%	1/4W
R805	1-249-431-11	CARBON	15K	5%	1/4W
R807	1-249-421-11	CARBON	2.2K	5%	1/4W
R808	1-249-438-11	CARBON	56K	5%	1/4W
R809	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R810	1-249-414-11	CARBON	560	5%	1/4W
R811	1-249-466-11	CARBON	56K	5%	1/4W
R812	1-247-758-11	CARBON	3.3K	5%	1/2W
R813	1-247-758-11	CARBON	3.3K	5%	1/2W
R814	⚠1-212-881-11	FUSIBLE	100	5%	1/4W F
R815	1-247-752-11	CARBON	1K	5%	1/2W
R816	1-247-752-11	CARBON	1K	5%	1/2W
R817	1-249-419-11	CARBON	1.5K	5%	1/4W
R818	1-249-431-11	CARBON	15K	5%	1/4W
R819	1-217-156-00	RES, METAL PLATE 0.22			
R820	⚠1-247-727-11	CARBON	10	5%	1/2W F
R821	⚠1-247-727-11	CARBON	10	5%	1/2W F
R822	1-249-433-11	CARBON	22K	5%	1/4W
R823	1-249-433-11	CARBON	22K	5%	1/4W

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Ref.No.	Part No.	Description				
R824	1-247-891-00	CARBON	330K	5%	1/4W	
R825	1-249-427-11	CARBON	6.8K	5%	1/4W	
R826	1-249-414-11	CARBON	560	5%	1/4W	
R827	1-249-438-11	CARBON	56K	5%	1/4W	
R828	⚠1-247-739-11	CARBON	100	5%	1/2W	F
R829	1-249-466-11	CARBON	56K	5%	1/4W	
R830	1-249-466-11	CARBON	56K	5%	1/4W	
R831	1-247-758-11	CARBON	3.3K	5%	1/2W	
R832	1-247-758-11	CARBON	3.3K	5%	1/2W	
R833	1-249-431-11	CARBON	15K	5%	1/4W	
R834	1-249-419-11	CARBON	1.5K	5%	1/4W	
R835	1-217-156-00	RES, METAL PLATE 0.22				
R836	⚠1-247-727-11	CARBON	10	5%	1/2W	F
R837	⚠1-247-727-11	CARBON	10	5%	1/2W	F
R838	1-249-435-11	CARBON	33K	5%	1/4W	
R839	1-249-435-11	CARBON	33K	5%	1/4W	
R840	1-249-421-11	CARBON	2.2K	5%	1/4W	
R902	1-249-417-11	CARBON	1K	5%	1/4W	
R903	⚠1-217-482-00	FUSIBLE	12	5%	1W	F
R904	1-249-429-11	CARBON	10K	5%	1/4W	
R905	1-249-423-11	CARBON	3.3K	5%	1/4W	
R906	1-249-429-11	CARBON	10K	5%	1/4W	
R907	1-249-429-11	CARBON	10K	5%	1/4W	
R908	1-249-417-11	CARBON	1K	5%	1/4W	
R913	1-249-425-11	CARBON	4.7K	5%	1/4W	
R918	1-249-425-11	CARBON	4.7K	5%	1/4W	
R919	1-249-429-11	CARBON	10K	5%	1/4W	
R920	1-249-393-11	CARBON	10	5%	1/4W	
R921	1-249-393-11	CARBON	10	5%	1/4W	
R1101	1-215-396-00	CARBON	91	5%	1/4W	
R1102	1-214-092-00	METAL	22	1%	1/4W	
R1103	1-249-405-11	CARBON	100	5%	1/4W	
R1104	1-215-450-00	CARBON	16K	5%	1/4W	
R1105	1-249-428-11	CARBON	8.2K	5%	1/4W	
R1106	1-249-433-11	CARBON	22K	5%	1/4W	
R1107	1-249-429-11	CARBON	10K	5%	1/4W	
R1108	1-249-429-11	CARBON	10K	5%	1/4W	
R1109	1-249-441-11	CARBON	100K	5%	1/4W	
R1110	1-249-429-11	CARBON	10K	5%	1/4W	
R1111	1-249-417-11	CARBON	1K	5%	1/4W	
R1112	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1201	1-249-441-11	CARBON	100K	5%	1/4W	
R1202	1-215-479-00	CARBON	270K	5%	1/4W	
R1205	1-249-435-11	CARBON	33K	5%	1/4W	
R1209	1-249-424-11	CARBON	3.9K	5%	1/4W	

Ref.No.	Part No.	Description			
R1213	1-249-438-11	CARBON	56K	5%	1/4W
R1215	1-215-486-00	CARBON	510K	5%	1/4W
R1216	1-249-429-11	CARBON	10K	5%	1/4W
R1217	1-249-433-11	CARBON	22K	5%	1/4W
R1218	1-249-429-11	CARBON	10K	5%	1/4W
R1219	1-215-471-00	METAL	120K	1%	1/6W
R1220	1-215-434-00	METAL	3.6K	1%	1/6W
R1221	1-215-493-00	CARBON	1M	5%	1/4W
R1222	1-215-452-00	CARBON	20K	5%	1/4W
R1223	1-249-441-11	CARBON	100K	5%	1/4W
R1224	1-249-437-11	CARBON	47K	5%	1/4W
R1225	1-249-437-11	CARBON	47K	5%	1/4W
R1226	1-249-381-11	CARBON	1	5%	1/4W
R1227	1-249-393-11	CARBON	10	5%	1/4W
R1228	1-249-385-11	CARBON	2.2	5%	1/4W
R1229	1-247-883-00	CARBON	150K	5%	1/4W
R1230	1-249-385-11	CARBON	2.2	5%	1/4W
R1231	1-249-385-11	CARBON	2.2	5%	1/4W
R1232	1-249-405-11	CARBON	100	5%	1/4W
R1233	1-249-441-11	CARBON	100K	5%	1/4W
R1234	1-249-425-11	CARBON	4.7K	5%	1/4W
R1235	1-249-425-11	CARBON	4.7K	5%	1/4W
R1251	1-215-469-00	METAL	100K	1%	1/6W
R1252	1-215-469-00	METAL	100K	1%	1/6W
R1301	1-249-441-11	CARBON	100K	5%	1/4W
R1304	1-249-409-11	CARBON	220	5%	1/4W
R1401	1-247-838-00	CARBON	2K	5%	1/4W
R1501	1-247-838-00	CARBON	2K	5%	1/4W
R1601	1-249-431-11	CARBON	15K	5%	1/4W
R1602	1-249-431-11	CARBON	15K	5%	1/4W
R1603	1-249-431-11	CARBON	15K	5%	1/4W
R1604	1-249-431-11	CARBON	15K	5%	1/4W
R1605	1-249-431-11	CARBON	15K	5%	1/4W
R1606	1-249-419-11	CARBON	1.5K	5%	1/4W
R1607	1-249-419-11	CARBON	1.5K	5%	1/4W
R1608	1-249-429-11	CARBON	10K	5%	1/4W
R1609	1-249-409-11	CARBON	220	5%	1/4W
R1703	1-249-440-11	CARBON	82K	5%	1/4W
R1704	1-249-440-11	CARBON	82K	5%	1/4W
R1705	1-215-470-00	CARBON	110K	5%	1/4W
R1706	1-215-468-00	CARBON	91K	5%	1/4W
R1707	1-249-381-11	CARBON	1	5%	1/4W
R1708	1-249-393-11	CARBON	10	5%	1/4W
R1901	1-249-414-11	CARBON	560	5%	1/4W
R1902	1-249-414-11	CARBON	560	5%	1/4W

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Ref.No.	Part No.	Description			
R1903	1-249-414-11	CARBON	560	5%	1/4W
R1904	1-249-414-11	CARBON	560	5%	1/4W
R1905	1-249-414-11	CARBON	560	5%	1/4W
R1908	1-215-432-00	CARBON	3K	5%	1/4W
R1909	1-249-423-11	CARBON	3.3K	5%	1/4W
R1910	1-215-432-00	CARBON	3K	5%	1/4W
R1911	1-249-426-11	CARBON	5.6K	5%	1/4W
R1912	1-249-426-11	CARBON	5.6K	5%	1/4W
R1913	1-215-454-00	CARBON	24K	5%	1/4W
R1914	1-215-450-00	CARBON	16K	5%	1/4W
R1915	1-215-450-00	CARBON	16K	5%	1/4W
R1916	1-249-431-11	CARBON	15K	5%	1/4W
R1917	1-249-431-11	CARBON	15K	5%	1/4W
R1918	1-249-421-11	CARBON	2.2K	5%	1/4W
R1919	1-215-493-00	CARBON	1M	5%	1/4W
R1920	1-215-493-00	CARBON	1M	5%	1/4W
R1921	1-247-887-00	CARBON	220K	5%	1/4W
R1922	1-247-891-00	CARBON	330K	5%	1/4W
R1923	1-249-437-11	CARBON	47K	5%	1/4W
R1924	1-249-417-11	CARBON	1K	5%	1/4W
RV101	1-228-995-00	RES, ADJ, CARBON 22K			
RV102	1-228-998-00	RES, ADJ, CARBON 220K			
RV1101	1-228-995-00	RES, ADJ, CARBON 22K			
RV1102	1-228-993-00	RES, ADJ, CARBON 4.7K			
RV1201	1-228-995-00	RES, ADJ, CARBON 22K			
RV1202	1-228-995-00	RES, ADJ, CARBON 22K			
RV1203	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
RY701	1-515-664-11	RELAY			
RY702	1-515-457-00	RELAY			
RY901⚠	1-515-617-11	RELAY			
SP901	1-503-852-11	SPEAKER (20CM)(WOOFER)			
SP952	1-503-850-11	SPEAKER (2.5CM)(SUPER TWEETER)			
SP953	1-503-851-11	SPEAKER (5.7CM)(SQUAWKAR TWEETER)			
SP954	1-503-851-11	SPEAKER (5.7CM)(SQUAWKAR TWEETER)			
SW251	1-570-203-11	SWITCH, LEAF (LOADING)			
SW252	1-571-274-11	SWITCH, LEAF (LIMIT)			
SW301	1-553-977-00	SWITCH, SLIDE			
SW302	1-553-977-00	SWITCH, SLIDE			
SW601	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)			
SW602	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)			
SW901⚠	1-553-575-21	SWITCH, SEESAW (POWER)			

Ref.No.	Part No.	Description
T101	1-404-650-11	COIL, DISCRIMINATOR
T102	1-404-651-11	COIL, DISCRIMINATOR
T103	1-404-713-11	TRANSFORMER, IF
T104	1-235-126-00	ENCAPSULATED COMPONENT
T901 ⚠	1-449-071-11	TRANSFORMER, POWER
T902 ⚠	1-448-964-11	TRANSFORMER, POWER
THP10011	202-850-00	THERMISTOR (POSITIVE)
THP10021	202-850-00	THERMISTOR (POSITIVE)
TM601	1-537-126-11	TERMINAL BOARD (ANT)
TM604	1-536-705-00	TERMINAL BOARD (SP)
TM951	1-537-098-11	TERMINAL BOARD (SPEAKER)
VZR901⚠	1-807-180-11	VARISTOR SNR-14A300K
X301	1-567-686-11	OSCILLATOR, CERAMIC
X302	1-567-686-11	OSCILLATOR, CERAMIC
X303	1-567-686-11	OSCILLATOR, CERAMIC
X1301	1-567-539-11	VIBRATOR, CRYSTAL 16MHz
X1302	1-567-686-11	OSCILLATOR, CERAMIC
X1303	1-567-718-11	OSCILLATOR, CRYSTAL 20MHz
X1304	1-567-718-11	OSCILLATOR, CRYSTAL 20MHz
X1602	1-567-686-11	OSCILLATOR, CERAMIC
XT101	1-567-125-00	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

1-463-886-21	COMMANDER, REMOTE (RM-Z1)
1-501-349-31	ANTENNA, LOOP
1-559-483-11	CORD, SPEAKER
2-224-236-00	BAG, CUSHION
3-769-433-11	MANUAL, INSTRUCTION
3-896-108-01	BAG, PROTECTION
4-374-474-01	COVER, BATTERY
4-374-476-11	LID, UPPER
*4-829-306-01	CUSHION
7-621-846-58	SCREW, TAPPING
4-922-305-01	CUSHION (RIGHT)
4-922-306-01	CUSHION (LEFT)
*4-922-350-01	FRAME, PROTECTION
*4-922-351-01	COVER, PROTECTION
4-922-355-01	BAG, PROTECTION
4-922-357-01	INDIVIDUAL CARTON

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

TROUBLESHOOTING GUIDE

Before consulting this guide, make sure that:
1. The power cord, speaker cords and antenna are properly connected.
2. The main power switch is set to ON.

CD Operation:

Symptom	Cause and remedy
Play will not start	• The disc is not positioned in the player correctly. • Dirty disc. • The disc has been inserted upside down. • The ▯▯ PAUSE button is activated. Press the ▯▯ button to release it. • Moisture condensation. Turn the power On and leave the unit alone for about an hour without operating it.
No Sound	• Incorrect or loose connection.

Radio Reception

Sympton	Cause and Remedy
Severe hum or other noise.	• The antenna is not securely connected. • The antenna is located too close to a transformer, motor, TV set or fluorescent light. Relocate the antenna.

Remote Control Operation

Symptom	Cause and Remedy
Nothing happens when you try to use the Remote Commander to operate the unit.	• The Remote Commander is not pointed at the remote sensor. • You are trying to use the Remote Comander outside its operating range. • Something is preventing the signal from reaching the remote sensor on the main unit. • The batteries in the remote commander are exhausted.

General

Symptom	Cause and Remedy
No audio	• The volume is on its lowest setting. • The MUTING button is activated. Press it again to release it.
No sound from one of the speakers, or an uneven distribution of volume between the two speakers	• The speaker cord is disconnected. • The BALANCE control needs to be adjusted.
Lack of bass or distorted sound such as one instrument seems too loud.	• Incorrect connection of the speaker + and − cords.
No audio Abnormal indication display Control of the unit using the Remote Commander is not possible except for CD play.	• The speaker terminals or speaker cord have a short. • Turn the power off and separate the + and − speaker cords before trying to play again.

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